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PAPER TRADE JOURNAL

Vol. XCVII NOVEMBER 2, 1933 No. 18

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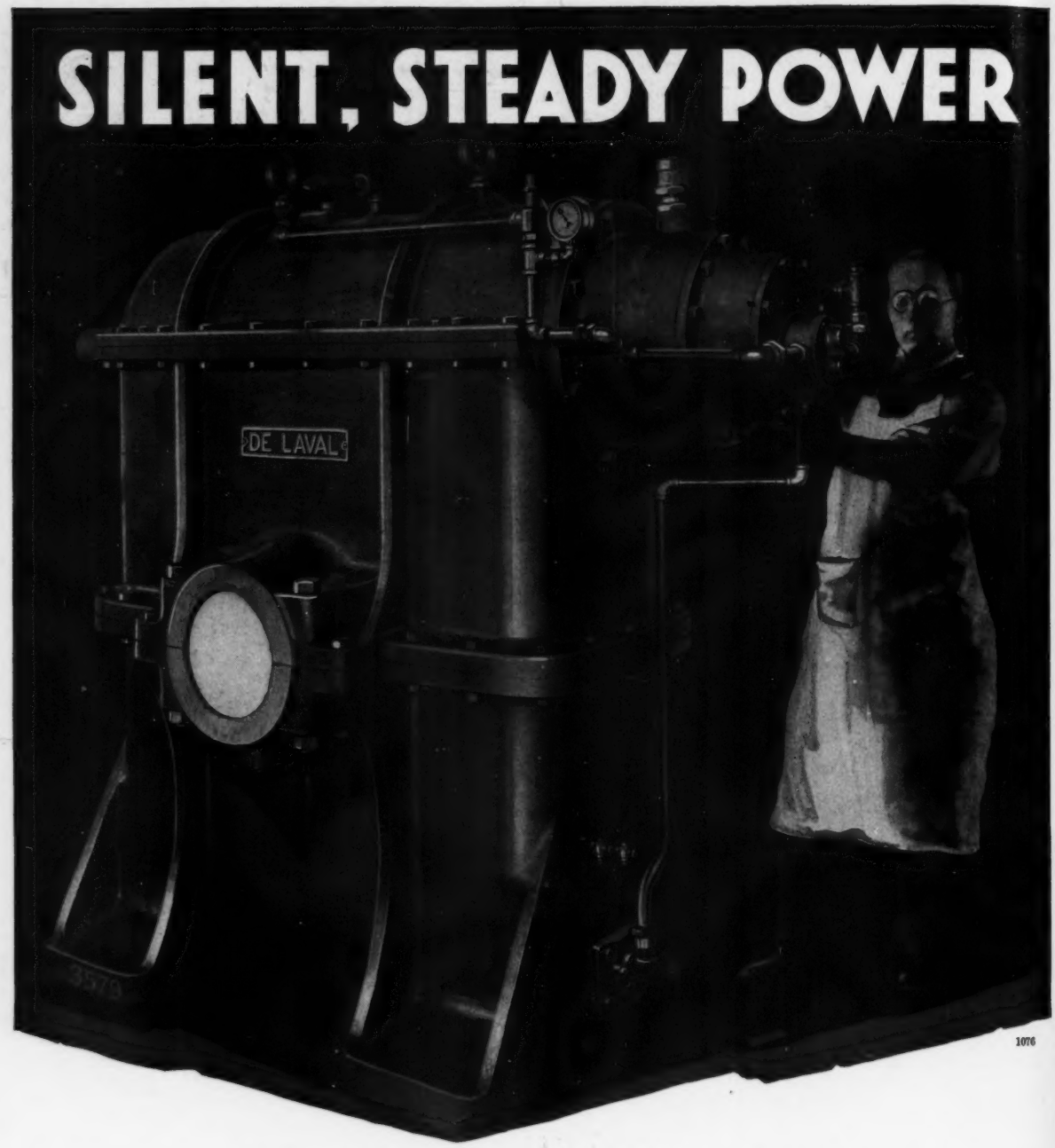

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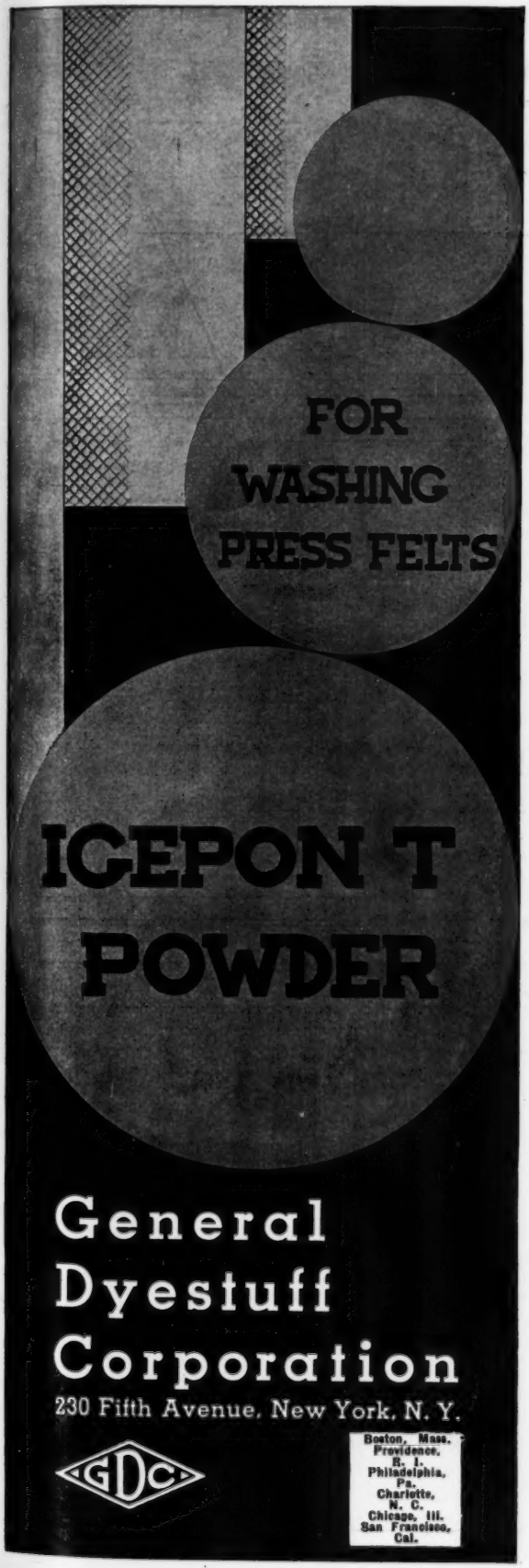

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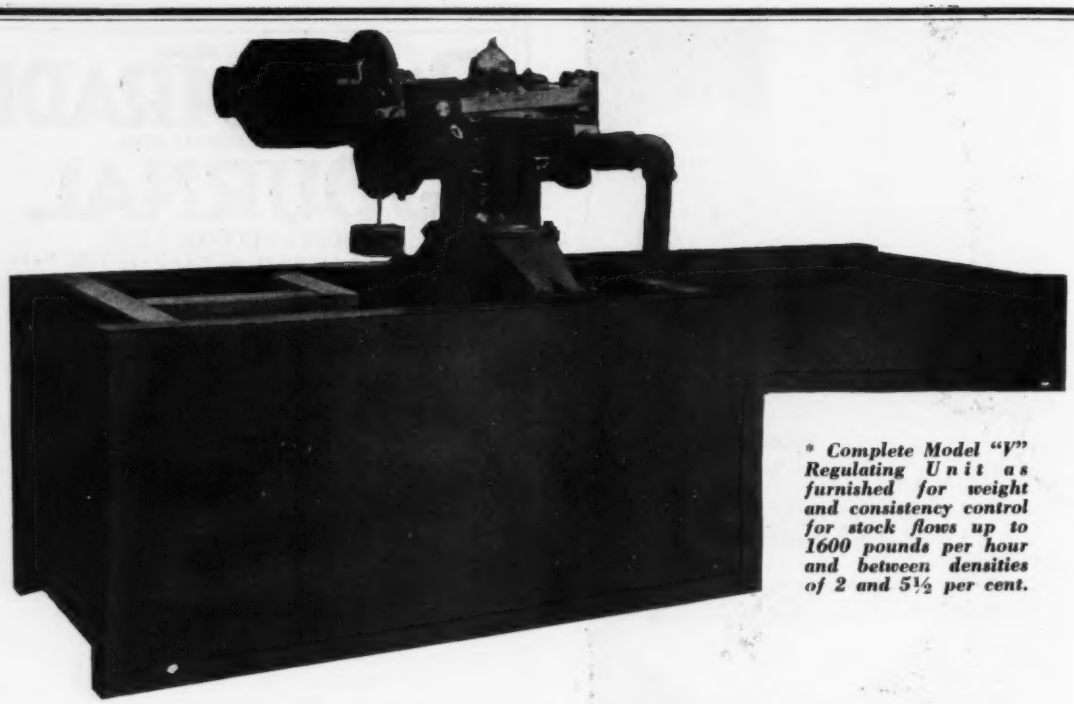
TABLE OF CONTENTS

Pacific TAPPI Meets at Tacoma 13
Bids and Awards on Government Paper 15
Westminster Paper Increases Profit 15
Wisconsin Paper Industry Activities 15
Decision Against Skaneateles Paper Co. 15
National Paperboard Association Changes 16
Toronto Market Moderately Active 17
Pulpwood Cutters Press Demands 17
Manitoba Pulpwood Deal 17
Chicago Market Steady to Firm 18
Paper Association to Elect 18
Canadian Exports Up in September 18
Boston Paper Demand Better 20
Changes in Carter-Rice Organization 20
New England Paper Merchants Meet 20
Standard Div. May Resume Soon 20
Hear Folding Paper Box Industry Code 22
Kimberly-Clark Completing Dam 22
Philadelphia Market Continues Quiet 24
Paper and Cordage Association Meets 24
Obituary 26
Indianapolis Prices Firm 27
Johnson Pulp Corp. Formed 27
Construction News 28
Editorial **30**
NRA CODE OF ITS OWN FOR CANADIAN NEWS PRINT PREDICTED 31
Paper Mill Employment Higher 31
Bartram Paper Products in New Plant 31
Oconto Falls Pulp Mill to Reopen 31
Technical Section
Analysis of Salt Cake 33
New TAPPI Members 35
The "New Deal" and the Patent Office 35
Analysis of Water 36
Effect of Sulphur Dioxide Gas on Alloys 40
Pulp and Paper Industry Literature Review... 42
Imports of Paper and Paper Stock 45
New York Market Review **47**
Miscellaneous Markets **48**
Market Quotations **48**

THE PAPER TRADE JOURNAL is indexed in Industrial Arts Index

Want and For Sale Advertisements, 52, 53



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PAPER TRADE JOURNAL

With Which Is Combined

PAPER

Vol. XCVII, No. 18 Thursday, November 2, 1933

Pacific Technical Section Meets at Tacoma

Coast Divisions of the Superintendents Association and the American Chemical Society Join in the Meetings Which Are A Big Success in Every Respect—Allen Abrams, President of TAPPI, is Guest of Honor—Lawrence Killam, President of the British Columbia Pulp & Paper Co., is Chosen President—Those Who Attended

About 150 members and friends attended the joint fall meeting of the Pacific Section of the Technical Association of the Pulp and Paper Industry, the Pacific Division of the Superintendents Association and the Puget Sound and Oregon Sections of the American Chemical Society at Tacoma, Washington, on October 21 and 22, 1933.

President Abrams Present

Allen Abrams of the Marathon Paper Mills Company and president of the Technical Association was present with Mrs. Abrams as guests of honor and Mr. Abrams was presented with a ten gallon hat as a memento of the occasion. Mr. Abrams outlined the recent work done by the Executive Committee at the Appleton meeting. He particularly stressed the need of new members in the national organization if this work is to go ahead successfully.

R. B. Hansen Presides

Ralph B. Hansen of the Weyerhaeuser Timber Company, Longview, Washington, presided as chairman during all the sessions.

The first paper was by R. S. Hatch and H. A. Hauff of the Weyerhaeuser Timber Company who discussed the Razek-Mulder Color Analyzer and Its Uses in the Measurement of Pulp and Paper Whiteness.

A. H. Lundberg of G. D. Jenssen Company described the various digester circulating systems.

The meeting was then devoted to the discussion of several interesting problems presented in the Question Box.

Plant Visits, Golf and Banquet

Following the luncheon the members were divided into a number of groups to visit the following plants: Tacoma Smelter, St. Regis Kraft Mill, Shaffer Box Company Sulphite Mill, Tacoma Electrochemical Plant, and the St. Paul and Tacoma Lumber Mills.

Many participated in the golf tournament and prizes were won by nearly everyone who competed. These prizes were awarded at the banquet at the Hotel Winthrop in the evening.

Scott Henderson was toastmaster at the banquet and introduced the speaker of the evening, Mayor M. G. Tennent of Tacoma.

Saturday Program

W. L. Beuschlein and V. C. Ives of the University of Washington read a paper on the Bone Dry Weights of Some Northwest Pulps.

Kenneth Shibley of the Shibley Company, Seattle, Washington, discussed Scientific Boiler Feed Water Conditioning.

Election of Officers

Lawrence Killam, president of the British Columbia Pulp and Paper Company, Vancouver, B. C. was elected chairman of the Pacific Section for the coming year. Myron W. Black of the Inland Empire Paper Company, Spokane, Washington, was elected vice chairman and A. S. Quinn of the Stebbins Engineering and Manufacturing Company was reelected secretary-treasurer.

1934 National Fall Meeting

Harland R. Heuer of the Weyerhaeuser Timber Company was appointed general chairman of the National 1934 TAPPI Convention to be held at Portland, Oregon. It is expected that this will be one of the finest meetings ever held by the association, and a large number of members is expected from the East.

Social Features and Ladies' Program

On Saturday afternoon, everyone attended the football game between the University of Washington and the College of Puget Sound, after which many played golf or visited the plant of the Hooker Electrochemical Company.

The evening was devoted to a dinner-dance, at which Ralph Shaffer presided as toastmaster.

An interesting program was arranged for the ladies which included visits to several prominent residences in Tacoma and sightseeing trips.

On Sunday the entire party visited Ranier National Park and had lunch at Paradise Lodge.

The success of the convention was due to the efforts of the Section officers and the Convention Committee, consisting of A. H. Hooker Jr., chairman, D. C. Cousins, vice chairman, and Fred C. Shaneman, who was in charge of golf arrangements.

Those Who Attended

Those present were the following:

Mr. and Mrs. Allan Abrams, Marathon Paper Mills Co., Rothschild, Wis.; W. H. Allard; F. Alsop, Van Waters & Roy, Portland; Wm. Anderson, Eagle Brass Foundry, Seattle; J. H. Angevine, Crane Co., Seattle.

Mr. and Mrs. J. H. Baker, Tacoma Electro-Chemical Co., Tacoma; M. Baldwin, Univ. of Washington, Seattle; Thomas J. Bannon, Western Gear Works, Seattle; D. L. Barlow; Mr. and Mrs. H. K. Benson, Univ. of Washington, Seattle; E. J. Berevind, Weyerhaeuser Timber Co., Longview; C. F. Beyerl, Draper Bros. Co., Portland; W. L. Beuschlein, Univ. of Washington, Seattle; M. W. Black, Inland Empire Paper Co., Millwood; Geo. W. Bowers, Consolidated Supply Co., Portland; Mr. and Mrs. J. Brown, Pacific Pulp & Paper Co., Seattle; R. V. Bingham, Bingham Pump Co., Portland; J. J. Butler.

W. E. Caldwell, Oregon State College, Corvallis; R. S. Carey, National Airlines Co., Portland; John M. Carlson, Puget Sound Pulp & Timber, Everett; C. P. R. Cash, St. Helens Pulp & Paper Co., St. Helens; M. Cavin, Puget Sound P. & T. Co.; R. E. Chase, R. E. Chase & Co., Tacoma; Chas. Cocroft, Everett Pulp & Paper Co., Everett; T. H. Conrad, Univ. of Washington, Seattle; Mr. and Mrs. D. E. Cousins, St. Regis Kraft Co., Tacoma.

H. A. Des Marais, General Dyestuff Corp., Portland; E. G. Drew, J. O. Ross Engineering Corp., Portland; Palmer Dunlap, Jenssen Co., Chehalis; E. N. Dripps.

R. P. Erwin, Univ. of Washington, Seattle.

Carl Fahlstrom, Longview Fibre Co., Longview; A. F. Francis, Chromium Corp., Milwaukee, Wisc.; M. H. Freedman, Col. Steel Co., Seattle; K. Freeman, Pacific Pulp & Paper Co.; Leo Friedman, Oregon State College, Corvallis; H. T. Fritz, Olympic Forest Prod. Co., Port Angeles; Uno Fryklund, St. Helens Pulp & Paper Co., St. Helens; J. Flynn, Hooker Electro-Chemical Co., Tacoma; Al Fritz.

W. A. Geiger, Weyerhaeuser Timber Co., Longview; C. Gamble.

Mr. and Mrs. Kenneth B. Hall, Huntington Rubber Co., Portland; Mr. and Mrs. Ralph B. Hansen, Weyerhaeuser Timber Co., Longview; Mr. and Mrs. Harold Hauff, Weyerhaeuser Timber Co., Longview; C. W. Haube, Univ. of Washington, Seattle; Scott Harlan, Pacific Pulp & Paper Co., Seattle; J. E. Hassler, Simond's Worden White, Portland; R. S. Hatch, Weyerhaeuser Timber Co., Longview; E. Y. Hayes, St. Regis Kraft Co., Tacoma; M. Heijkenjok; G. F. Henry, College of Puget Sound, Tacoma; H. R. Heuer, Weyerhaeuser Timber Co., Longview; Dr. Wm. Hirschkind, Great Western Electro-Chemical Co., Pittsburgh, Pa.; Mr. and Mrs. W. S. Hodges, American Wringer Co., Portland; W. S. Hodgson, Fibreboard Prod. Co., Port Angeles; Scott Henderson; Mr. and Mrs. Ralph Hicks; A. H. Hooker, Jr., Hooker Electro-Chemical Co., Tacoma. C. G. Johnson, Rasmussen Paint Co.; E. R. Johnson, Jenssen Co., Chehalis; J. F. Jefferies.

W. N. Kelly, Weyerhaeuser Timber Co., Longview; L. Killam, B. C. Pulp & Paper Co., Vancouver, B. C.; K. A. Kobe, Univ. of Washington, Seattle.

J. M. Lamb, St. Regis Kraft Co., Tacoma; M. Lamimas; Mr. and Mrs. B. T. Larrabee, Weyerhaeuser Timber Co., Longview; Mr. and Mrs. H. A. Long, Carborundum Co., Seattle; Mr. and Mrs. A. H. Lundberg, G. D. Jenssen Co., Seattle.

W. MacLaurin, B. C. Pulp & Paper Co., Woodfibre; C. F. A. Mann, PAPER TRADE JOURNAL, Tacoma; W. C. Marshall, Heller & Merz, Portland; J. W. Merriman, Merriman Paint Co., Seattle; Ned Menzies, W. S. Tyler & Co., Seattle; G. F. Mitchell, Hessaerstd Iron Works, Portland; W. J. McJannet, Eagle Brass Foundry, Seattle; Douglas Myers, Balfour, Guthrie Co., Tacoma; W. C. Mumace.

W. N. Osborne, Hooker Electro-Chemical Co., Tacoma; John R. Owens, Nev. Lead Co., Seattle.

A. M. Partansky, Univ. of Washington, Seattle; Thos. Perrin, Hooker, Electro-Chemical Co., Seattle; H. T. Peterson, Weyerhaeuser Timber Co., Longview; Mr. and Mrs. R. T. Petrie, Bagley & Seivall, Longview; H. L. Potter, Pacific Pulp & Paper Co., Portland.

Mr. and Mrs. A. S. Quinn, Stebbins Engineering & Manufacturing Co., Seattle.

GROUP PICTURE TAKEN AT FALL MEETING OF PACIFIC COAST DIVISION OF TAPPI AT TACOMA, WASH.

S. C. Rasmussen, Rasmussen Paint Co.; H. H. Richmond, Electric Steel Foundry, Portland.

B. W. Sawyer, Foxboro Co., Portland; Mr. and Mrs. Ralph Shaffer, Shaffer Box Co., Tacoma; Mr. and Mrs. Fred C. Shaneman, Tacoma Electro-Chemical Co., Tacoma; Roy Shaneman; Mr. and Mrs. Brian Shera, Tacoma Elec. Co., Tacoma; Kenneth Shibley, Shibley Co., Seattle; L. K. Smith, Pacific Pulp & Paper Co., Seattle; Ray I. Smythe, 301 Park Bldg., Portland; P. F. Stafford, Univ. of Oregon.

M. G. Tennant, Mayor of Tacoma; Mr. and Mrs. Earl G. Thompson, Great Western Electro-Chemical Co., Seattle; Herbert A. Vernet, Congress Hotel, Portland; A. D. Wood, 25 No. E. St., Tacoma; Paul Wilson; E. P. Wood, Weyerhaeuser Timber Co., Longview; M. Woodey; A. C. Zimmerman, Longview.

Bids and Awards on Government Paper

WASHINGTON, D. C., November 1—The Government Printing Office has received the following bids for 1,065 sheets of blue gummed paper; Mathers-Lamm Paper Company, at $14.60 and $12.01 per M sheets; R. P. Andrews Paper Company, $12.75 and $13.95; Virginia Paper Company, $13.00; Walker-Goulard-Plehn Company, Inc., $16.00 less 2 per cent; and Milton Paper Company, Inc., $14.91 less 2 per cent.

The Aetna Paper Company has been awared the contract for furnishing the Government Printing Office with 18,400 pounds (80,000 sheets) of 50 per cent rag single ply white index paper, 22½ x 28½, 230 lb. at 9.67 cents per pound, bids for which were received on October 11.

The Walker-Goulard-Plehn Company will furnish 29,-100 pounds (150,000 sheets) of 21 x 32½ inches, 50 per cent white rag index paper at 10 cents per pound less 2 per cent, bids for which were received on October 6.

J. Barcham Freen & Son, Maidstone, Kent, England, will furnish 4,800 sheets of 100 per cent rag 20½ x 25½ handmade book paper at $45 per M sheets and Portals, Ltd., Whitechurch, Hants, England will furnish 4,800 sheets of 100 per cent rag handmade antique cream laid book paper at $42.083 per M sheets. Bids for these items were received on September 20.

Westminster Paper Increases Profit

VANCOUVER, B. C., October 27, 1933.—Operations of the Westminster Paper Co., Ltd., New Westminster, B. C., showed a larger gross and net profit during the year ending July 31, 1933, according to the annual report. Net sales for the two years were practically similar, the total for the past fiscal year being $463,180.

After increased provision for depreciation and income tax reserve and payment of dividends at the rate of 40 cents a share, the surplus was increased by a small amount and working capital was improved.

Improved earnings are due largely to general economies in operation and concentration of the sales force on the more profitable items. Earnings equalled 45 cents a share on the 47,789 shares of common stock against 42 cents in 1932.

Capital assets total $666,082, of which $70,000 is in leasehold, $520,000 in buildings and equipment, after reserve of $57,243 for depreciation and $75,131 is in patents and trademarks. Investments in bonds and stock of Pacific Coast Paper Mills is carried at $107,375 and sinking fund for first mortgage debentures at $16,846. There is outstanding $299,000 of debentures and a sinking fund payment of $10,000 is due at the end of October. Stock outstanding consists of 47,789 shares of $10 par value common.

Wisconsin Paper Industry Activities

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, WIS., October 30, 1933—Contracts have been awarded to C. R. Meyer & Sons Company, Oshkosh, Wis., for rebuilding of two warehouses at the Telulah mill of the Fox River Paper Company, Appleton, Wis. The buildings were badly damaged by fire recently. The work is nearing completion.

The Meyer Company has also completed construction work on the new dam of the Nicolet Paper Company on the Fox river at DePere, Wis. The dam adjoins the new one completed recently by the United States government. It replaces an old wooden dam and is built of concrete and steel according to the most modern specifications. The contract amounted to approximately $30,000.

The Nicolet Paper Company last week received a shipment of 300 tons of unbleached pulp from Finland, brought from Montreal aboard the freighter *Coteandoc*. An additional part of the cargo was delivered to the Marinette and Menominee Paper Company, Marinette, Wis.

Dredging of the harbor at Ashland, Wis., will be started soon by the Zenith Dredging Company, of Duluth, Minn. The contract totals $190,475, and is one of the re-employment projects of the government. Docking facilities will be greatly improved for the mills in that section.

Further efforts to organize employees of paper mills are being undertaken by officials of the International Paper Makers' Union and the Pulp and Sulphite Workers' International. Meetings have been held at Neenah and Marinette, Wis., urging workmen to affiliate. It is reported that 75 signed up at Marinette, mostly employees of the Marinette and Menominee Paper Company. About 200 attended the meeting at Neenah and fifty were reported to have joined.

A seven year old suit is nearing settlement in which the Marinette and Menominee Paper Company, Marinette, Wis., is seeking damage from the Chicago, Milwaukee and St. Paul Railway Company. The suit involves $2,749 for an electric truck wrecked during switching operations by the railroad company, and $1,136 for loss of the use of the truck until replaced. Both sides agreed to a dismissal of the jury and a directed verdict, which will be rendered after briefs have been filed.

W. J. Peacock, personnel manager of the Northern Paper Mills, Green Bay, Wis., will be one of the speakers at the annual convention of the Wisconsin Vocational Association Nov. 2, 3 and 4 in Milwaukee, Wis. His subject will be "The New Challenge to Vocational Education," especially as it deals with industrial changes.

Ben Metternich, manager of the Marathon Paper Company's plant at Ashland, Wis., is using football as a diversion this fall. He has become manager of the city football team at Ashland and expects to help turn out a winning aggregation.

Decision Against Skaneateles Paper Co.

[FROM OUR REGULAR CORRESPONDENT]

SKANEATELES, N. Y., October 30, 1933—A decision handed down this week by the tax appeals board at Washington shows tax deficiencies of $25,847 against the Skaneateles Paper Company of this village. The company has been held liable for a jeopardy assessment of $25,302 in income and excess of profit taxes for 1917 and additional taxes aggregating $545. The petitioner in its appeal claimed that the deficiency was barred by the statute of limitations, declared that the government in assessing the deficiency had failed to include invested capital, amounts represented through cancellation of a $35,000 debt to the Oswego Pulp and Paper Company, and also claimed the disallowance of legitimate claims for depreciation.

National Paperboard Association Changes

Will Permit Proper Functioning Under the NRA—Sidney Frohman, of Hinde & Dauch Paper Co., Elected Chairman, W. J. Alford, Jr., Vice-Chairman—H. S. Adler Appointed Sec.-Treas. —Constitution and By-Laws Now Provide for Division of Association in Nine Groups

Important changes in the National Paperboard Association, to permit proper functioning under the National Recovery Act, were effected at a meeting held for this purpose in New York City, Wednesday, October 11, 1933.

Sidney Frohman, of the Hinde & Dauch Paper Company, Sandusky, Ohio, was elected chairman of the association, and W. J. Alford, Jr., of the Continental Paper Company, Ridgefield Park, N. J., was elected vice-chairman.

Revised Constitution and By-Laws Adopted

Revised constitution and by-laws were adopted. In accordance with the new constitution, the association is being incorporated under the laws of the State of Delaware as a corporation, not for profit.

Provision is made for Groups as follows, (each group electing from its members three directors who shall be members of the board of directors of the association): 1. Eastern Container-Board, 2. Western Container-Board, 3. Southern Container-Board, 4. Eastern Boxboard, 5. Western Boxboard, 6. Corrugating Materials, 7. Pacific Coast, 8. Lightweight Chipboard, 9. Other Board Products.

The members of the association elect four additional directors, who are known as directors at large. The operating groups of the association are autonomous in the conduct of their activities.

The board of directors elects from its membership an executive committee. The executive committee is designated as "The Code Authority," and it is further provided that the National Recovery Administrator may appoint three persons as additional members of The Code Authority.

It is provided that subject to the direction of the board of directors, the business of the association shall be vested in an executive manager, (who shall not be a member of the board of directors), under whose direction will be the various association services.

Board of Directors

The following is the personnel of the Board of directors as announced and as elected at the meeting:

Chairman—Sidney Frohman, Hinde & Dauch Paper Company, Sandusky, Ohio; Vice-Chairman—W. J. Alford, Jr., Continental Paper Company, Ridgefield Park, N. J.

Eastern Container-Board—Philip R. Allen, Bird & Son, Inc., E. Walpole, Mass.; Anthony Desiderio, Clifton Paper Mills, Clifton, N. J.; Wm. Etra, Penn Fibreboard Corporation, New York, N. Y.

Western Container-Board—M. B. Hall, American Box Board Company, Grand Rapids, Mich.; W. P. Paepcke, Container Corporation of America, Chicago, Ill.; H. L. Rauch, Consolidated Paper Company, Monroe, Mich.

Eastern Boxboard—W. J. Alford, Jr., Continental Paper Company, Ridgefield Park, N. J.; J. A. Downs, MacAndrews & Forbes Company, New York, N. Y.; J. Gibson McIlvain, Downingtown Paper Company, Downingtown, Pa.

Western Boxboard—John L. Barchard, Hummel & Downing Company, Milwaukee, Wis.; E. T. Gardner, Gardner-Richardson Company, Middletown, Ohio; G. G. Otto, Alton Box Board & Paper Company, Alton, Ill.

Corrugating Material—Sidney Frohman, The Hinde & Dauch Paper Company, Sandusky, Ohio; Alan G. Goldsmith, Mead Paperboard Corporation, Chillicothe, Ohio; W. B. Turner, Terre Haute Paper Co., Dayton, Ohio.

Pacific Coast—J. W. Kieckhefer, Kieckhefer Container Company, Milwaukee, Wis.; D. H. Patterson, Jr., Fibreboard Products, Inc., San Francisco, Cal.

Lightweight Chipboard—H. W. Nichols (Grp. Chman.), Fox Paper Company, Lockland, Ohio; D. H. Greene, Prairie State Paper Mills, Joliet, Ill.; H. D. Schmidt, Schmidt & Ault Paper Company, York, Pa.

Four Directors at Large Elected by Assn. Members—E. Victor Donaldson, Robert Gair Company, Inc., New York, N. Y.; Foreman N. Leopold, Morris Paper Mills, Chicago, Ill.; C. E. Nelson, Mac Sim Bar Paper Company, Otsego, Mich.; Hugh Strange, John Strange Paper Company, Menasha, Wis.

Executive Committee and the Code Authority

A nominating committee, consisting of John L. Barchard, Henry D. Schmidt and Foreman N. Leopold, was appointed by Chairman Sidney Frohman. The nominating committee placed in nomination the names of the following, who were unanimously elected as members of the executive committee and The Code Authority:

Chairman—* Sidney Frohman, The Hinde & Dauch Paper Company, Sandusky, Ohio. Vice-Chairman—* W. J. Alford, Jr., Continental Paper Company, Ridgefield Park, N. J.; E. V. Donaldson, Robert Gair Company, Inc., New York, N. Y.; E. T. Gardner, Gardner-Richardson Company, Middletown, Ohio; A. G. Goldsmith, Mead Paperboard Corporation, New York, N. Y.; J. W. Kieckhefer, Kieckhefer Container Company, Milwaukee, Wis.; J. G. McIlvain, Downingtown Paper Company, Downingtown, Pa.; G. G. Otto, Alton Box Board and Paper Company, Alton, Ill.; W. P. Paepcke, Container Corporation of America, Chicago, Ill.; H. L. Rauch, Consolidated Paper Company, Monroe, Mich.; W. B. Turner, Terre Haute Paper Co., Dayton, Ohio.

* Denotes Member ex officio.

Staff Personnel

The meeting voted in favor of continuing the offices and staffs at 41 East 42nd Street, New York City, and at 608 S. Dearborn St., Chicago, as at present until further notice.

Appointment of Secretary-Treasurer

H. S. Adler was appointed secretary and treasurer.

Next Meeting of Association

Attention was called to the fact that following the hearing on the Code in Washington in September, an announcement had been issued that there would be a meeting of the Industry in Chicago on the effective date of the Code. It was the sense of the meeting that the above announcement be rescinded, and that in lieu thereof, the matter of time and place of the next meeting be left subject to the call of the Chairman.

Toronto Paper Market Only Moderately Active

Demand for Bonds, Ledgers and Writings Light, Although Volume of Book Paper Sales Is Well Sustained—Coarse Wrapping Paper Section Rather Listless at Present—Light Weight Papers Moving Into Consumption Fairly Freely for Season

[FROM OUR REGULAR CORRESPONDENT]

TORONTO, October 30, 1933—The month of October yielded slightly less business in wholesale paper circles in Ontario than during September and the paper merchants are finding business somewhat spotty. Specialty lines are moving much more readily than standard lines and in no department of the paper trade is there any volume selling to the printing trade or any other consuming source. The wholesale paper houses are not carrying any more stock than they actually need to meet customers' demands and the printing industry is buying from hand to mouth only. A few of the larger lithographing houses are fairly busy and are making fair requisitions for paper but as a rule the printing business is decidedly dull—a condition that has been having its effect on the paper supply houses.

Notwithstanding light business among the jobbers, mill activity is keeping up fairly well and some of the mills manufacturing fine papers are putting out fair tonnages. One Ontario plant manufacturing blanks, manilas and covers reports greater volume of output and sales during September than they have had for a couple of years, although October recorded a dropping off in sales. The sales of book paper have been keeping up quite well but there is only a very moderate demand for other classes of fine papers, such as bonds, ledgers and writings.

The paper converting trade is decidedly dull. Will Fall and Christmas deliveries of papeteries and school books over these branches of the paper converting trade have little to fall back on and current business is very light. Light weight papers are moving fairly well, although this section lacks the usual pep. Coarse papers are not doing as well as was expected for them at this season and sales volume is light. Paper box manufacturers are making only light requisitions, although some business is being done by the set-up branch as against very light production by the folding and corrugating plants.

Pulpwood Cutters Press Demands

Organized pulpwood cutters, who are demanding a price of $4 per double cord and a maximum daily deduction for board of 75 cents, compared with present prices paid of $3.25 to $3.50 per double cord and deductions of $1 per day in some camps in the Port Arthur district, will continue negotiations with the individual pulpwood contractors, it was decided following a conference called by the workers at Port Arthur and attended by operators and local agents of American firms. Efforts of the operators to organize and take a united stand in negotiations covering wage and working agreements for the winter work in the woods have so far not been successful. Asked by the operators present at the conference whether a promised strike of pulpwood workers would be made to extend to camps the operators of which had made satisfactory agreements with the men, representatives of the workers said they had no authority to reply, but would take the matter up with the men at their next meeting.

Manitoba Pulpwood Deal

Manitoba Power Company may not benefit from the reported purchase of 20,000 cords of pulpwood by the Manitoba Paper Company. Expectations were that the pulpwood meant the opening of the Pine Falls plant, but G. T. Clarkson, the receiver and manager, states that the purchase of the wood does not mean the plant will be reopened. It is not stated where the pulpwood is to be shipped, but in purchasing the wood in Manitoba, the company was able to have the Provincial Government suspend application of a 2 per cent tax on the Pine Falls property. It is possible that the wood will be shipped to the head of the lakes, where the company has another plant in operation.

Installs Machinery In Winnipeg Plant

Dominion Envelope and Cartons (Western) Ltd., have just installed a new five-color rotary printing press for the printing of cellophane, butter wrappers, glassine, tinfoil, etc. The new unit is of the very latest type and cost the company about $40,000 installed. It embodies all the latest devices for multiprinting and will equip the company for the sale of its products in Western Canada. The company's chief plant is in Toronto.

Notes and Jottings of the Trade

The Hon. James Lyons, former Minister of Lands and Forests for Ontario, and Mayor of Sault Ste. Marie, is employing a number of men cutting pulpwood on the F. H. Clergue property at Moffly Hill. Several thousand cords will be taken out.

The work of transporting 40,000 cords of pulpwood from Nipigon to paper mills at Detroit, Mich., and Tonawanda, N. Y., which has been in progress continuously this summer for Oscar Styffe, Port Arthur pulp and timber contractor operating for the past few years near Long Lac, has been completed. Three barges and the tug *Sulphite* of the Detroit Sulphite Pulp and Paper Company, were chartered for the work. The wood was loaded at Nipigon after being transported by rail from Long Lac. The wood shipped from Nipigon for the company was that cut a year ago and hauled to the railway line last winter. The Abitibi Power and Paper Company will ask the Quebec Public Service Commission for the right to float timber on the rivers surrounding Lake Abitibi up to June 15, 1934.

Hawk Lake Industries, Ltd., has been granted a provincial charter with an authorized capital of $40,000 and headquarters at Cochrane. The company is empowered to carry on in all its branches pulpwood, logging and other activities.

C. I. Hill, of the Regal Paper Company, New York, was a recent caller on a section of the paper trade in Toronto.

George Carruthers, president of Interlake Tissue Mills, and Mrs. Carruthers, have returned to Toronto after a six weeks' trip to the Pacific Coast.

Port Royal Pulp and Paper Company, at Fairville, N. B., has increased the wages of its 230 employees by 10 per cent., effective from October 15. The mill is now operating continually in three eight-hour shifts. This company came into existence a short time ago to take over the property of the old Nashwaak Pulp and Paper Company, which had been inoperative for over a year. Not long after the new concern took over the pulp market underwent a marked improvement, both in respect to demand and price, so that Port Royal Pulp has been established on a paying basis.

Chicago Paper Market Rules Steady to Firm

Demand for Various Standard Grades of Fine Paper Fairly Satisfactory—Position of News Print and Ground Wood Papers Practically Unchanged—Healthy Request for Paper Board Experienced—Specialty Papers Seasonally Active

[FROM OUR REGULAR CORRESPONDENT]

CHICAGO, Ill., October 28, 1933—The Chicago paper market still awaits the signing of the paper code and awaits it hopefully as a means of assisting the industry in retaining the gains it has already made throughout the past few months. Meanwhile reports clearly indicate the need of stabilization of all industry in order that the advertising and catalog work of thousands of industries can go ahead with price quotations, plans, etc. It is clearly evident that buying for the purpose of escaping rapidly rising commodity prices is over and that jobbers and merchants are well stocked. The hesitancy arises on the part of paper users who refuse to make published commitments without a more stable situation.

Meanwhile local markets have been holding firm. The kraft rise of a few days ago has been maintained. Demand has been fair in most grades of fine papers and little variation in prices is noted. Books and covers remain virtually the same. Bonds and ledgers are in a similar category. Demand remains fairly healthy as far as board is concerned. News prints and ground woods are still reported uncertain because of various existing conditions including code provisions. Little change is noted here over last week's report. Specialty papers for holiday use are in fair demand and would be much better if general conditions were stabilized. Waste papers remain virtually unchanged.

Chicago Paper Association To Elect

The Chicago Paper Association will go into the 1933-34 year with virtually a new slate of officers if the wishes of the nominating committee are carried out as announced at the regular meeting of the association on October 24. The committee presented the following slate which will be voted on at the annual dinner meeting of the association to be held at the Bismarck Hotel, Chicago, the evening of November 14: President, M. A. McNulty Paper and Twine Corporation; executive vice president, retail, William Chukerman, J. Chukerman & Sons; executive vice president, wholesale, J. H. D. Murphy, Commonwealth Paper Company; secretary-treasurer, the ever faithful and many times elected James F. Danehy, of the Schwarz Paper Company. Walter Schulman, of Levin Brothers Paper Company, will automatically become chairman of the board to succeed Earl Beier of Beier & Company.

The October 24 session not only included the report of the nominating committee but also a serious discussion covering the reportedly unfair and "chiselling" practices of a number of coarse paper firms not allied with the association. Even with the acceptance of the long-promised Code of Fair Practices the association feels that this class of merchants will be a distinct problem and one of the main points of the 1933-34 program will cover ways and means of taking care of this type of competition.

News of the Trade

The Hobart Paper Company, Chicago, jobbers of paper goods, with offices in the Conway Building, staged a golf outing on October 18 at the Rolling Green Country Club. Twenty mill friends of the company enjoyed the outing and the dinner. The event was so successful that Hobart plans to make it an annual affair. Here are the winners: Low gross, W. J. Tilden, Eastern Manufacturing Company (82); low net, F. J. Morrison, Tomahawk Paper Company; second low net, Ray Russell, Marathon Paper Company; blind bogey, Cary Langford, Waldorf Paper Company; second blind bogey, Roy Jones, Hobart Paper Company; high gross, Joe Cowhill, Tomahawk Paper Company (141).

Much activity is present at the Moser Paper Company headquarters as that concern is expanding its line of standard printing papers. Much of this expansion, it is reported, centers around the addition of Forrest Hopkins to the sales personnel of the concern. Mr. Hopkins was for many years vice president and general manager of the Paper Mills Company, is widely and very favorably known and exceedingly well versed in printing papers. Lawrence Brady, formerly with Moser and for the past few years associated with Mr. Hopkins, also went with Moser the fore part of October. With these two men added to its staff Moser is preparing an appreciable expansion in the above mentioned lines.

An announcement, labeled "important", coming from the Paper Foundation offices in the Conway Building, Chicago, states that the closing date of A Century of Progress has been extended from October 31 to November 12, thus giving exhibitors an additional twelve days without further investment. Printers Week got under way the first of this week and Printers Day was carried out on October 26. A good attendance of printers and printers supply executives showed up at the paper exhibit along the lake front.

Canadian Exports Up in September

Returns by the Dominion Bureau of Statistics show that Canada's exports of paper and manufactures of paper in September had a value of $6,920,604, as compared with $6,557,286 in August and $5,633,443 in September, 1932. For the 12 months ending September, however, they are still well below that of the corresponding 12 months of 1932, the figures being $72,770,572 and $93,302,377 respectively.

The bulk of the amount was made up of newsprint, exports of which in September amounted to $6,612,258, as compared with $5,424,021 in September, 1932. Of this amount exports to the United States amounted to $5,814,387. Australia came next with $199,797, then the United Kingdom with $171,680, Argentina with $163,375, China with $86,650, Japan with $70,885, New Zealand with $31,717, British South Africa with $11,554, Peru with $10,866, Chile with $10,755, and the Irish Free State with $8,132.

The total exports of wood pulp and screenings amounted to $2,372,807, which was lower than in August ($2,655,779), but much higher than in September, 1932 ($1,372,728). It is also noteworthy that for the twelve months ending September 1933, the value of the exports of woodpulp and screenings were higher than in the previous twelve months, the figures being $21,888,111, as against $21,672,529.

Exports of pulpwood for September were $792,168, as against $738,979 in September, 1932.

November Announcement

"We Do Our Part" [and this in 1933]

Our Part at U. S. Gypsum is modernizing twelve beaters (including two continuous beaters), and building one new 30 ton continuous beater.

Our Part at Tomahawk Kraft Paper Co. is building two Dilts New Type beaters (Making six Dilts New Type there.)

Our Part at Latex Fiber Industries is building two new beaters and also building two new bandless rolls for other beaters.

Our Part at Fibreboard Products, Inc. is building two new Dilts New Type beaters (making six Dilts beaters there).

Our Part at Champion Fibre Company is modernizing two beaters (this makes seven complete Dilts New Type beaters and two Dilts modernized beaters there.)

Our Part at National Folding Box is building one Dilts New Type beater. (This makes eight Dilts beaters there.)

Our Part at Moore & Thompson's is modernizing three beaters.

Our Part at Superfine Paper Mills is modernizing two beaters.

Our Part at Schmidt & Ault Paper Co. is building one new breaker beater and modernizing another.

Our Part at Gardner-Richardson is modernizing one breaker beater and two finishing beaters. (They have 17 Dilts beaters.)

Our Part at Penn Fibreboard Corp. is rebuilding three beater rolls into the Dilts bandless type.

Our Part at Missouri Mapes Corp. is building one new Dilts continuous beater.

Our Part at Endicott-Johnson Corp. is building three new Special bandless rolls.

Our Part at Sutherland Paper Company is building one new 125 ton continuous beater.

Our Part at Glassine and Fort Howard and Dunn is modernizing three concrete tub beaters.

Our Part at National Cellulose Corp. is building one Dilts New Type beater.

Our Part at Pioneer Paper Co. is building two Dilts New Type beaters (making twelve Dilts beaters there).

Our Part at many mills is agitators, chests, beater rolls, washers, fly bars, bedplates, rag knives and incidental equipment.

Our Part at YOUR mill—what shall it be?

—Dilts—

MACHINE WORKS Inc. FULTON, N.Y.

"Your Paper Is Made in Your Beaters"

Demand for Paper Slightly Better in Boston

Fine Paper Market Continues Fairly Active—Although Coarse Wrapping Paper Section Remains Quiet, Outlook for Future Brightens—Box Board Quotations Holding to Schedule, In Most Instances—Paper Stock Exceedingly Dull at Present

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., October 30, 1933—That a fair amount of business was transacted in the wholesale paper market here during the week was the consensus of opinion in the trade. Paper merchants feel cheerful, as a rule. In some quarters a slight improvement was noted over the previous week. More active buying, when it begins generally, will proceed normally, it is felt, without the spurt of a few months ago, and to fill actual needs. In some cases, printing papers were fairly active, while other lines showed a slackness. Wrapping paper was hardly more than in fair demand, not so good for the time of year as it should be, but it is stated that a greater volume of buying will be felt before long. Box boards were quiet, but prices continued firm.

Paper stock was reported as exceedingly quiet. It was stated in the trade that during the summer months, while prices were advancing, mills over bought and are now out of the market. Orders are hard to secure, with prices weakening. Foreign exchange continued high, and consequently few goods were imported, although shipments of supplies bought several months ago may be coming in.

Mixed papers were slightly easier on the low side of the range, going down to .25 from .27½, but maintained the upper side at .30. Old newspapers declined to .42½ @ .47½ from a range of .50 @ .55. Other grades declined as follows: No. 1 hard white shavings to 2.10 @ 2.20 from 2.50; No. 1 soft white shavings to 2.00 @ 2.10 from 2.25; No. 1 kraft to 1.05 @ 1.10 from 1.10 @ 1.15, and corrugated boxes to .32½ @ .37½ from .35 @ .45. Manila paper, however, advanced to 1.05 @ 1.10 from .90 @ 1.05. In bagging, wool tares, heavy, were marked at a flat 1.05, compared with a previous range of 1.05 @ 1.15. Australian wool pouches went up to 2.25 @ 2.50, compared with a previous range of 2.00 @ 2.25 and heavy baling bagging to 1.50 @ 1.60 against a former range of 1.45 @ 1.50. In old domestic rags, No. 1 roofing stock declined to .60 @ .65 from .65 @ .70, but the No. 2 grade advanced to .55 @ .60 from .50 @ .55. In foreign rags dark cottons declined to .75 from .80.

Changes Made in Carter-Rice Organization

At a recent meeting of the board of directors of Carter, Rice & Co., Corp., C. A. Esty was elected president and P. A. McGreenery was made a director of the company. The present officers are: C. A. Esty, president; H. L. Carter, treasurer, and F. H. Winter, secretary. E. D. Bement has been appointed assistant to the president and in charge of sales promotion.

New England Paper Merchants Meet

At a special meeting of the New England Paper Merchants Association held Thursday evening at the Boston Chamber of Commerce, with President F. Bendel Tracy in the chair, the by-laws of the National Paper Trade Association were adopted, as regards membership. The new by-laws widen the scope, so that a great many not previously eligible may now become members. Fifty-eight attended, representing 32 houses, including a large proportion from out of town. Three new members were elected, as follows: The Robbins Paper Company, of Boston; the Ideal Paper Supply Company, of Worcester, and the Stedman Paper Company, of Holyoke.

The association approved the appointment of Frank B. Cummings as executive secretary. Mr. Cummings was formerly president of Storrs & Bement Company, vice-president of the Whitaker Paper Company, Commissioner of Animal Industry in Massachusetts, and a moving factor in the National Economy League.

News of the Trade

Sales of the Gilbert Paper Company, Menasha, Wis., and the Howard Paper Company, Urbana, Ohio, handled by the Andrews Paper Company, are increasing in this territory.

Frank H. Merrill, president, and Fred Herbolzheimer, head of the fine paper department of the Andrews Paper Company, New England distributors of the lines of the Gilbert Paper Company, have returned from a trip to Menasha, where they visited the mill of the company. The plant is one of the most up-to-date in the country.

Eliot Wright, advertising manager of the United States Envelope Company, Springfield, Mass.; Walter R. Perry, of the Plymouth Paper Company, Holyoke, Mass., formerly representative of the Crocker-McElwain Company, and H. L. Simons, Jr., of the A. M. Collins Manufacturing Company, Philadelphia, called on the trade last week. Among those whom Mr. Simons visited was Henry L. Goodman, New England representative of the Collins company.

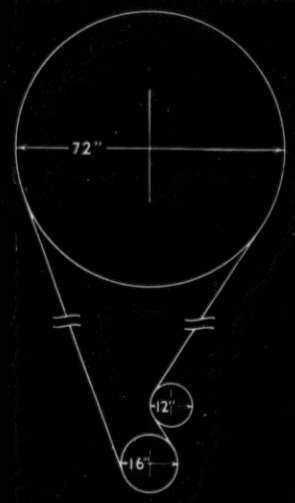
Members of the executive committee of the Associated Industries of Massachusetts for 1933-34 include Irving N. Esleeck, president of the Esleeck Manufacturing Company, Turners Falls, Mass.; B. Preston Clark, vice-president of the Plymouth Cordage Company, 55 Kilby street, Boston, and Everett G. Gray, assistant treasurer of the Ludlow Manufacturing Associates, 80 Federal street, Boston.

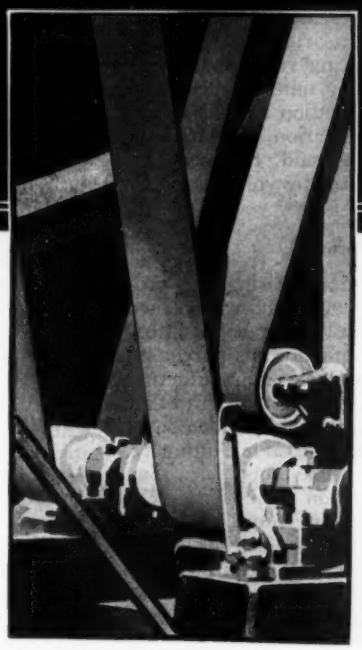
Shipments of old newspapers and over- issue news will be made from Boston within a month is intimated by James Flett, head of the paper mill supply house of Chicago, which has country-wide branches. The stock is to be baled at the organization's local subsidiary, Centum Paper Mills Supply Corporation. Waste paper of a considerable number of local retail and chain stores is handled by the Flett concern. Mr. Flett was here last week.

Standard Div. May Resume Soon

HUDSON FALLS, N. Y., October 30, 1933—Rumors have been current here for the past few weeks that the Standard division of the United Wall Paper factories is to resume operations soon but company officials declared that they do not know when the plant will be reopened. It has been declared on several occasions by the company that a resumption of local activities depends largely upon business conditions. Rumors for the past few days were to the effect that the plant would be reopened early in November and it remains to be seen whether they are without foundation or not. Operations were suspended several months ago when 200 hands were thrown out of employment. Business men claim that reopening the plant would go a great ways toward improving the unemployment situation.

BEAT DOWN THE COSTS ON THAT BEATER





A HARD, tough, belt-eating drive, that beater.

Costs money in the making of paper—especially if you try to drive it with a belt that can't stand the gaff.

Goodyear has a belt that saves money every day on beaters—the Goodyear COMPASS Belt, specified to the job by the G. T. M.—Goodyear Technical Man.

Trouble-free, long-lived, powerful, this belt and other Goodyear Mechanical Rubber Goods for the paper industry—see table*—deserve the thoughtful consideration of every buyer and user.

Get in touch with the G. T. M. through Goodyear, Akron, Ohio, or Los Angeles, California, or your nearest Goodyear Mechanical Rubber Goods Distributor.

***NEW AND EXCLUSIVE GOODYEAR DEVELOPMENTS FOR PAPER MILL SERVICE**

- Goodyear Style M Paper Machine Hose (Tube VULCANIZED to prevent flaking)
- Goodyear Rubber Rollers
- Goodyear COMPASS (Cord) Endless Transmission Belt

THE GREATEST NAME IN RUBBER

GOODYEAR

BELTS • MOLDED GOODS • HOSE • PACKING

Hear Folding Paper Box Industry Code

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., November 1, 1933—The Folding Paper Box Industry, which already claims to be 2½ per cent above its 1929 employment figures as a result of the President's Reemployment Agreement, and which under its proposed code would raise employment to between 50 and 100 per cent above depression levels, on October 26 presented its code of fair competition to Deputy Administrator W. W. Pickard, at a public hearing in the new House Office Building.

The code was presented by R. R. Richardson and Charles C. James, representing the Folding Paper Box Association of America, and each article was discussed by an official in the industry. In opening his presentation, Mr. Richardson, who represents the Chicago Carton Company, of Chicago, Ill., told the Deputy Administrator that there were approximately 255 manufacturing units in the industry of which 121 belong to the Association and 73 others although not belonging to the Association, subscribe to the code. The total of 194 units, he said, represent approximately 85 per cent of the industry by volume and by number of employees.

Divided Into Three Groups

The industry, for purposes of administering the proposed code was divided into three groups, those who own their own mills for the manufacture of paper board, those who merely make up the product from materials purchased from mills and those manufacturers whose manufacture of folding paper boxes is only incidental to their other business. He explained that this division was made so as to provide equable representation on the Code Authority.

C. S. Rutherford, of Fibreboard Products, Inc., San Francisco, Cal., discussed Article 1, on definitions, very briefly. Sol Herzog, counsel to the Folding Box Division of the National Paper Box Manufacturers Association and also representing the Richmond Paper Box Manufacturers Association, asked that the definition "Association" be changed to read, "Associations" and include the Folding Box Division of the National Paper Box Manufacturers Association, as that was also a subdivision of the industry, which should be adequately represented.

Protests Against "Loose Wording"

Arthur M. Claffeo, representing Bird and Son, of East Walpole, Mass., protested against what he termed the "loose wording" of the definition of the Industry, which, he said, might be construed to include his company's product. Bird & Son manufacture, it was brought out, shoe boxes, which are shipped as blanks, that is knocked down, and are assembled in permanent form, either by the buyer or by assemblers in various parts of the country. He exhibited samples of the firm's products to the Deputy Administrator and was questioned at some length by Mr. Pickard, who then asked Mr. Richardson whether the Association had intended to include such products at those manufactured by Bird and Son. Mr. Richardson replied that he had always considered them as folding boxes.

Minimum Wages and Labor Provisions

Articles 3, 4 and 5 relating to maximum hours, minimum wages and general labor provisions were discussed by H. C. Stevenson, of the Rochester (N.Y.) Folding Box Company. The code provides for a 40 hour work week averaged over a period of 13 consecutive weeks, with not more than 48 hours in any one week, a 56 hour work week for watchmen, a 48 hour week averaged over a period of 13 weeks for chauffeurs and truckmen and 168 hours in any 4 week period for engineers, firemen and electricians. Mr. Stevenson said the average work week in the industry had been from 48 to 60 hours. The exceptions to the 40 hour week would involve about 15 per cent of the employees. He pointed out that a 2 per cent tolerance was asked for in order to care for the highly seasonal and sporadic nature of the business.

A sliding scale of wages is established by the code providing for 35 cents per hour for male and 30 cents for female help in the north and 30 cents for male and 25 cents for female help in the south.

The wages established, according to Mr. Stevenson, are 1¾ per cent over the 1929 level and 23 per cent over the 1932 level. Discussing the southern differential, he stated that the present differential now in effect amounted to 22½ per cent.

H. W. Sullivan, a member of the Labor Advisory Board, and a vice-president of the International Brotherhood of Sulphite, Pulp and Paper Mill Workers, handed in a brief, protesting against the hours and wages as provided in the code and urging a representative of Labor on the Code Authority. He also pointed out that no limit was fixed in the proposed code as to the number of hours to be worked per day.

"The differential between the North and the South," he declared, "is not one of costs but of standards."

Open Price Policy

A. I. Harris, of the Atlanta (Ga.) Paper Company, discussed briefly the Open Price Policy established in Article 6, technical alterations to which were urged by Mr. Herzog and Sol Abbott, of the National Retail Dry Goods Association.

The other articles were discussed briefly by William D. Lane, of the Eggerse-O'Flying Company, Omaha, Neb., F. S. Wakeman, of the Robert Gair Company, of New York and Colin Gardner of Gardner-Richardson Company, of Middletown, O. Technical changes were suggested by Mr. Herzog.

The hearing adjourned, subject to the call of the Administrator.

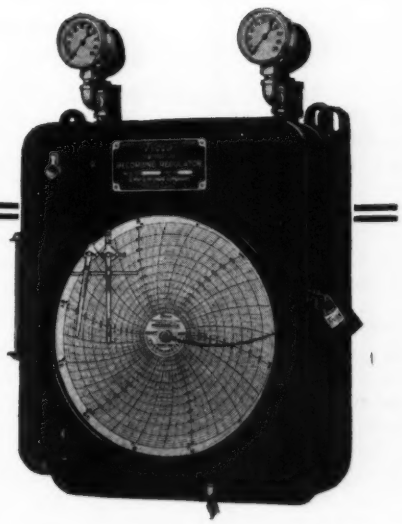
Corrugated and Solid Fibre Container Hearing Set

A public hearing on the code of fair competition proposed for the Corrugated and Solid Fibre Container Industry by the National Container Association will begin at 10 A.M. on Friday, November 17, in the Small Ball Room of the Willard Hotel. Deputy Administrator W. W. Pickard will preside.

Kimberly-Clark Completing Dam

Reconstruction of the Cedars dam on the Fox river adjacent to the Kimberly-Clark Corporation's mill at Kimberly, Wis., is expected to be completed about December 1. The project will cost about $60,000 and the work is being done for the government by Lemke Construction Company, Kaukauna, Wis. As soon as navigation closes, work also will be resumed on the new lock five miles further down the Fox river at Rapid Croche. Construction was started last winter, but was suspended during the shipping season.

Increases wood pulp production of a grinder 8.9%



Automatic Control of grinder temperature by Taylor System wins over manual control in thorough test. This system is a profitable investment.

IS AUTOMATIC CONTROL of pulp grinders more efficient than hand operation? Will it increase wood grinder capacity?

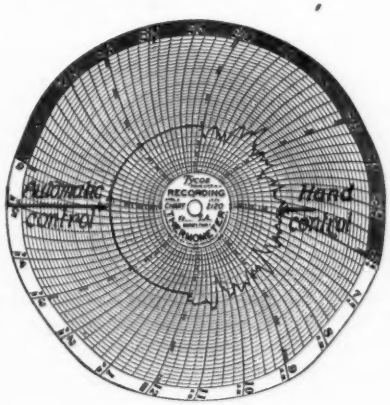
A large mill recently made a several weeks' test on a grinder to find out. Results of operation under manual control were recorded and compared with those obtained with use of a Taylor System of Automatic Grinder Temperature Control.

Automatic Control won. Production was increased 8.9%. Automatic Control not only increases the capacity of the grinder but also the quality of the pulp. Paper made from pulp produced under Taylor Control has a milled test 2 to 3 points higher than paper made from pulp produced under hand control of temperature.

Wouldn't you welcome such a record in your mill? The percentage would probably be different. But Taylor Temperature Control would surely produce an increase. It would assure finer stock at lowest cost. It would give you pulp more uniform in texture, freeness, color and strength. It would reduce your stone cost.

The Taylor Recording Temperature Regulator shown here is the heart of the Automatic Control. It maintains the desired temperature and also gives a daily chart record for your files. Its performance makes it an investment which starts paying dividends at once.

Let us give you full information on this Taylor System. Write Taylor Instrument Companies, Rochester, N.Y., U. S. A., or Taylor Instrument Companies, Ltd., Toronto, Canada.



The heart of Taylor Grinder Control is this Recording Regulator. This Taylor System was the first successful one of its type to be installed anywhere. Many installations in Canada and the U. S. are giving mills more efficient and economical grinding than they ever had before.

SPECIAL
TAYLOR NEWS FLASH

Beginning October 1st, all Taylor Temperature Recorders and Recording Regulators will be shipped in a new die-cast case originated by a noted American product designer. This modern case, with many distinct Taylor improvements in the mechanism of the instrument inside, represents another step in the effort to provide industry with the most up-to-date temperature and control equipment. More later.

Here is a typical chart record comparing the uncertain temperatures maintained under hand control and the practically perfect line made under Taylor Automatic Control.

† Tycos **Taylor** TEMPERATURE and PRESSURE INSTRUMENTS

† The name Taylor now identifies our complete line of products including Tycos instruments.

INDICATING • RECORDING • CONTROLLING

Philadelphia Paper Market Continues Quiet

Consumers of Various Standard Grades of Paper Reported to be Witholding Orders Due to Delay in Formal Ratification of Industrial Recovery Codes—Decided Recession of Trading Experienced in Local Paper Stock Division

PHILADELPHIA, Pa., October 30, 1933—Although quietness still rules, moderately so in the ranks of the paper distributors and very pronouncedly in those of the paper stock dealers, activities through the Philadelphia Paper Trade Association are moving forward with speed. One of the highly important developments will be revealed at the close of this week at the next meeting of the Trading Area Committee and will disclose the result of a thorough and comprehensive investigation which has been progressing in the last few weeks. It is believed that the deliberations of this committee and their recommendations will result in the absolute elimination of causes of friction which have long been existent.

In brief, the Board of Governors of the Philadelphia Paper Trade Association, on the suggestion of Frederick S. Balch, vice president and treasurer of the Schuylkill Paper Company, authorized the appointment by President William A. Hentz of a Trading Area Committee "which is to define the geographical area which should be considered definitely as Philadelphia territory and throughout which territory actions of the association should be definitely behind and to further determine what logically may be considered overlapping areas in which the activities of other local associations or individual houses must be considered and to arrange proper effective cooperation in such overlapping areas."

O. Friele Heads Trading Area Committee

On this committee there were appointed O. Friele, Paper Merchants, Inc., chairman; George N. Ernest; H. C. Reilly; C. A. Wilder; T. H. Butler Smythe and Joseph Weaver. In carrying out the purposes of the committee, Chairman Friele sent to every member of the association not only in Philadelphia but in the metropolitan trading area of Philadelphia extending at this time, approximately, as far north as Wilkes-Barre and Scranton, west as Harrisburg and New York and throughout southern New Jersey; all of Delaware, and that portion of Maryland lying along the southern border line of Pennsylvania, a map of the section together with a letter of request that the firms and individuals addressed, draw a line in red pencil around the particular area with their own community as center, which constitutes their prime market or in other words the area in which most of their business was transacted, and then a blue pencil line defining the much greater area in which the balance or most of the balance of the business was done. Request was also made that on the back of this map there be noted the competition in the particular territory from houses not members of the Philadelphia Paper Trade Association, with details of the location of such competitors and whether their competition is of vital or of minor importance.

Behind the survey and the questionnaire there lies solely the determination to observe all the conditions of the Blanket Code under which the paper distributors are now working, and eventually of the separate Codes when they shall have been formally approved. It is believed also that the result of this survey will develop such an inter-relationship between the Paper Trade Association of Philadelphia and of cities who are competitors in at least some of the territory now included in the Philadelphia Metropolitan area, that points of contact which hitherto had been the cause of misunderstanding will be obviated. It is believed entirely possible that uniformity in trade customs and practice can be established in this wise as hitherto has not been possible, and to that end the result of the operations of the Trading Area Committee will be stimulating to business.

There is some disappointment that the good auguries of mid-summer have not been realized. Probably because of the uncertainty regarding the value of the dollar and delays in formal ratification of tentative codes, there has been a tendency on the part of consumers to withhold their orders until absolute necessity requires their execution. The result is that last week has been largely one of hand to mouth buying with collections difficult, and the return of the former evil of shopping about for bargains or for concessions.

Book Stock Prices Easier

In the paper stock market a curious condition of affairs exists. During July and August the paper stock packers were doing not only a rushing but a really profitable business, after the months, almost years, of profitless transactions. September was a month of uncertainty. October came in with a decided recession and is closing with almost a slump in this market. During the past week, however, there were further declines from the radical ones which had to be made a week ago in all grades of packing save the very best grade of material, and this week there occurred a slight recession in only one line—No. 1 books heavy, which went off about 10 cents per hundred weight. However, the eagerness of the mills to buy has virtually gone. The stock packers are not inclined to attribute this to any concerted action among the mills but to a realization of the fact that they have suffered very heavy cancellations of orders placed at a time when the market was on the up and up; now that consumers feel that they have nothing to gain by immediately placing orders for future deliveries and may have something to gain by deferring them until their immediate requirements compel them. At the present time there are no such urgent and immediate requirements. The packers are looking forward with great expectancy to the advent of November because they believe that month will definitely determine the trend of the market and be a guide to the future. There was some slight demoralization in the local market because of the known tendency of mills to purchase in other markets—New York particularly—even at a higher price for a smaller volume of stock with the object of keeping down prices for the much larger volume which must be purchased locally.

Paper and Cordage Association Meets

The Paper and Cordage Association met in regular session on October 20th in the Adelphia Hotel with a goodly representative of members in attendance. W. Earl Smith, of Andalusia Textile Mills, Andalusia, Bucks County, Pa., addressed those present, explaining in a forcible and informative manner the details of the processing tax on

(Continued on page 46)

The Open Door

of the

NEW YORK CITY CANCER COMMITTEE

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Obituary

Dr. James E. Campbell

Dr. James E. Campbell, whose death was briefly mentioned in the PAPER TRADE JOURNAL of October 19, was buried in the family plot in Brookside Cemetery, Watertown, N. Y., on October 17, beside the grave of his brother, the late Dr. Clarence W. Campbell. Services at the grave were in charge of Watertown Lodge, No. 49, F. & A. M., of which he was at one time Master.

A native of New York City, where he was born to the late Dr. Charles E. and Eugenia W. Gillespie Campbell, May 4, 1872, he attended Peekskill Military Academy and Yale University, from which he was graduated in 1893. He was catcher on the Yale baseball team. After further studies at New York University, he was admitted to the practice of medicine in 1897. He served an internship in Bellevue Hospital and then practiced his profession in New York for a short time. His brother, the late Dr. Clarence W. Campbell, who died May 15, 1931, had a career largely the same as Dr. James Campbell's and was admitted to the practice of medicine in 1898.

A year or two after he had set himself up in practice Dr. James Campbell came to Dexter to take over the management of the paper mill. His brother joined him in 1902.

Dr. Charles E. Campbell, the father, had become interested in the paper industry in 1887 when he bought an idle factory building at Dexter as a speculation.

The Dexter Sulphite, Pulp and Paper Company was incorporated October 8, 1887, with $100,000 capital by the senior Dr. Campbell, James Autterson and E. Frederick Bermingham as the owners. The exclusive right to manufacture sulphite pulp in fourteen counties was secured from the American agents for this process, then a new one.

The two sons of the elder physician used to spend their summers at Dexter with their uncle, Mr. Bermingham, who preceded them in the active management of the mill, while they were yet in school. They were fond of sailing and often took trips lasting eight to ten weeks. Once they sailed from Ogdensburg to Buffalo. Dr. James E. Campbell kept up his interest in cruising over the waters of Lake Ontario throughout his life and was a member of the Crescent Yacht Club. In 1922 he purchased the *Elise*, a 60-foot, high-powered cruising yacht. He later disposed of it.

After the Dexter company's complete control had been assumed by his father he moved to Dexter, as did his brother soon after. Both moved to Watertown about fifteen years ago.

Under the management of the Drs. Campbell, the Dexter plant steadily expanded. Two concrete wings were added to the old stone building and an adjoining structure for use as a boiler room was built. A saw mill and boiler house were added and a Jensen tower for the making of acid was erected.

For about two years, at the time when Dr. Campbell assumed control, the Dexter company operated the plant of the St. Lawrence Paper Company at Dexter under lease but in the summer of 1901 it was purchased from Darwin Gotham by W. P. Herring and Louis S. Lansing. With this sale the Campbell concern bought the Frontenac mill in June, 1901, of Mr. Lansing and Kenneth L. Warren.

The Frontenac company had been organized some years before by Fremont W. Spicer, Dexter, aided by Mr. Autterson. As soon as the Campbell brothers assumed control they tore down the old buildings and erected stone ones, and in the following year installed a new and larger machine.

About 1908 the Campbells purchased the Howland Bag and Paper Company at North Towanda and its machinery was moved to Dexter. The bag business has been an important part of the company's business in recent years. The plant's bag capacity is about 4,000,000 daily.

The Glenfield and Western Railroad, now out of existence and its roadbed going back to grass, was built by the Dexter Sulphite, Pulp and Paper Company and the Page Fairchild Company of Oswego, manufacturers of shade cloth and lumber, in 1905. It ran up into the Tug Hill woods a distance of 35 miles from Glenfield. It was used chiefly for hauling out timber and was built when supplies on the upper reaches of the Black River became depleted.

To supplement it, the Campbell company formed the Monteola Hardwood Mills, Inc., of Glenfield in 1920 and started the lumbering of hard wood on the Tug Hill tracts, the wood suitable for paper making had already been cut. In 1927 the Campbells sold their half interest in the Glenfield & Western 20,000 acres of timber land and the hardwood company to the Keystone Wood Chemical and Lumber Corporation.

About fifteen years ago the Campbells also organized the Dexter and Northern Railroad, which built about a mile of tracks connecting the company's mills and the New York Central at Dexter Junction. Extensive litigation preceded its completion.

Dr. James Campbell purchased, in behalf of his company and the Sherman Paper Company, the site for a pulpwood terminal at Morristown in 1929.

He was prominent in the paper industry as a whole and had served as a member of important committees of the American Pulp and Paper Association. He was active in affairs of the Empire State Forest Products Association. He was the president of the Pulp and Paper Traffic Association of this section of the state up until the time this country entered the World War.

During the war he served as a dollar a year man and was sent to Europe in February, 1919, to unofficially collect data for the Federal Trade Commission on the European paper industry. He visited France, England, Norway, Sweden and Finland. He made another tour of inspection of European paper mills in 1920. In 1925 he was named one of the two delegates of the American Pulp and Paper Association to the meeting of the International Chamber of Commerce at Brussels, Belgium.

Prominent in Masonry, Dr. Campbell was master of Watertown lodge, No. 49, F. & A. M., in 1910, and was grand sword bearer of the grand lodge in 1920. He was named a trustee of the Masonic Hall and Asylum Fund of the Grand Lodge in 1922 by Justice Arthur S. Tompkins of Nyack, then Grand Master, and served in that capacity for several years. The trustees have charge of the Masonic Home at Utica, as well as other properties.

He was also on the building committee for the local Masonic temple. His Masonic affiliations included membership in Watertown Lodge, No. 49, F. & A. M.; Watertown Chapter, No. 59, R. A. M.; Watertown Commandery, No. 11, Knights Templar; the Scottish Rite bodies; Media Temple, A. A. O. N. M. S.; the Syracuse Consistory, which gave him a 32nd degree rank.

He was a director of the Northern New York Trust Company. He was also interested in the management of the Richville Limestone Company.

Dr. Campbell was a member of the Jefferson County Golf Club and a former member of the Black River Valley Club, the Crescent Yacht Club, the Thousand Island Yacht Club and the Thousand Island Country Club.

Always interested in the costs of government, in 1932 he wrote and had published a pamphlet, 'Tax Reduction, A

Very Plain Statement to the Taxpayers of Jefferson County, An Analysis of the Tax Budget." In it he analyzed local governmental costs and urged reductions in expenditures. At the end of the session of the board of supervisors in that year he sent the board a letter commending it on the reductions made.

His marriage to Miss Florence Oxley took place in New York, November 2, 1907. He and his brother married sisters. Surviving, besides his wife, are his mother, aged 84, who resides in New York; and a daughter, Mrs. Frederick M. Parker, city. One daughter, Consuela, died in 1920.

Frank E. Tufts

Frank E. Tufts, vice president and treasurer of the Oxford Paper Company of New York City and Portland, Me., died in Montclair, N. J., on October 24, at the Mountainside Hospital, after an illness of three months. His home was at 248 South Mountain Avenue.

Mr. Tufts was born in Loyalton, Cal., sixty-nine years ago, and had resided in Montclair for the last seventeen years. He had been in the paper manufacturing industry for more than fifty years. Besides holding positions in the Oxford Paper Company, he was a director of the Rumford Falls Power Company and the Rumford Falls Realty Company in Maine and the Nashwak Pulp and Paper Company, Ltd., of St. John, N. B.

He was a member of the Oakdale Country Club of Rumford, the Cumberland Club of Portland and the National Republican Club of New York. He was a thirty-second degree Mason.

Mr. Tufts is survived by a widow, Mrs. Lila Jordan Tufts, and a daughter, Miss Katherine Tufts, both of Montclair, and two brothers, William and Walter Tufts of Portsmouth, N. H.

Harold D. Cornwall

[FROM OUR REGULAR CORRESPONDENT]

UTICA, N. Y., October 21, 1933—Harold D. Cornwall, prominent in paper mill circles of Northern New York, died in the hospital here this week following an operation for appendicitis. He was 53 years old. Besides being prominent in the paper industry he was also a trustee of the New York State College of Forestry at Syracuse University. He made his home here, where he was manager of the Pa Pro Company, which turned out solid fiber shipping containers. The deceased also organized the Holyoke Fibre Box Company, of Holyoke, Mass., a subsidiary of the local company. He was also the organizer in 1929 of a solid fiber container company in France known as the Le Carton Arme. He was a director in several financial institutions, besides being prominent in fraternal affairs. The survivors include his wife, a brother and his parents.

William T. Elkinton

William T. Elkinton, chairman of the board of the Philadelphia Quartz Company, died October 25 in his 73rd year. He was the third generation of his family in the business, which celebrated its centerary in 1931, and seventh generation of the Elkinton family in America.

Through more than fifty years of active business life, which saw the company expand from a local enterprise to a business of national scope, William T. Elkinton consistently remembered his religious and philanthropic responsibilities. To use an expression taken from an old letter quoted in the company's centenary booklet, he was concerned always "to dwell under a proper regard for the best things."

Naturally modest and retiring, he did many good works known only to those immediately concerned, but he also held numerous offices of trust in religious and welfare enterprises. He was for many years Treasurer of Philadelphia Yearly Meeting of the Society of Friends.

He was known by his patient steadfast character, formed by rigid self discipline and unfailing consideration for the personalities of those with whom he came in contact. He never hesitated to put his sense of right above personal gain, nor to espouse an unpopular cause at the dictates of his sensitive conscience.

He is survived by his wife, Eleanor Rhodes Elkinton and two children, Thomas W. Elkinton, president of Philadelphia Quartz Company, and Anna Elkinton Evans. His sister, Mrs. Inazo Nitobe resides in Tokio, Japan, and his brother, Alfred C. Elkinton, of Berkeley, California, is president of the Philadelphia Quartz Company of California, Ltd.

Indianapolis Prices Firm

[FROM OUR REGULAR CORRESPONDENT]

INDIANAPOLIS, Ind., Oct. 30, 1933—Considerable firmness is seen in the local paper market. The general price level is somewhat lower, however, than it was several weeks ago. Demand in some lines continues fair and the jobbers particularly believe there will be some good business done before the first of the year. In the fine paper field there has been some disappointment over the failure of several advertising campaigns to materialize. It is hoped that these merely have been deferred until a later date. The reason for this delay particularly on the part of retailers in the state is believed to be due to the slowness in arriving at a code for retailers. With this accomplished last week these dealers know all the conditions they must meet and it is believed that delayed projects will be started.

Demand for boxes and containers remains good and promises to show a more or less steady expansion during the winter months. Jobbers report the sale of transparent papers to be increasing also, due perhaps to new uses being found for this merchandise. Local manufacturers of waxed papers for the bread trade report continued good business and the Indiana plants seem to be working to capacity.

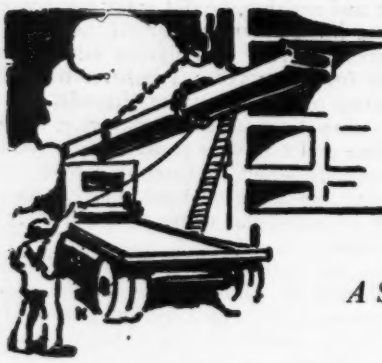
Paper stock men are selling as little as possible in view of cheaper paying prices at the mills. Nor are they buying in large quantities. What they buy is being quoted pretty cheaply. With the paper code out of the way the local trade believes the mills will begin buying more actively.

Dealers report quite a volume of Hallowe'en merchandise sold and they are beginning to think of the holidays and the probable demand. It is felt the volume this year will be larger than last, but not so great as in 1931. The statistical department of Indiana University has issued a review of business for the last month which shows an increase in virtually all lines over the same period last year but in all lines the volume is far below normal.

Johnson Pulp Corp. Formed

[FROM OUR REGULAR CORRESPONDENT]

PORT LEYDEN, N. Y., October 30, 1933—Corporation articles were filed this week with the Secretary of State by the Johnston Pulp Corporation, which plans to maintain its principal office in this place. Among the directors and stockholders are J. E. Johnston, R. M. Johnston and H. E. Johnston, all residents of this village. John E. Johnston is the largest stockholder of the company's stock which is authorized at 200 shares having no par value.



CONSTRUCTION NEWS

A Summary of Vital Facts Regarding Construction, Finances and Operation of Paper Mills

Construction News

Kingsport, Tenn.—The Tennessee-Eastman Corporation, manufacturer of cellulose and cellulose rayon products, has begun an expansion and improvement program at local mills, to provide for large increase in present capacity. Main manufacturing unit will be extended for additional floor space, approximately doubling present size; new filtration plant will be installed and extensions made in power plant and other mechanical departments. Work will be carried out over period of months and is estimated to cost more than $4,000,000, including equipment. Company is an interest of the Eastman Kodak Company, Rochester, N. Y. T. S. Wilcox is general manager at Kingsport plant.

New York, N. Y.—The Sherman Paper Products Corporation, manufacturer of paper cups and kindred paper goods, has leased space in the Starrett-Lehigh Building, West Twenty-seventh street and Thirteenth avenue, and will equip and occupy for new plant.

Hardwick, Mass.—The Hardwick Paper Mills Corporation, recently chartered with capital of $45,000, is said to be arranging early operation of a paper mill in this section. New company is reported to be taking over an existing mill. Horace A. Sheesley is president, and Arthur C. F. Keleher, 299 Park avenue, New York, N. Y., treasurer and representative.

Cloquet, Minn.—The Northwest Paper Company is considering early rebuilding of portion of yard property and buildings, recently damaged by fire. An official estimate of loss has not been announced.

Chicago, Ill.—The Einbund Brothers Paper Box Manufacturing Company, recently organized with capital of 50 shares of stock, no par value, will take over and succeed to the Einbund Brothers Paper Box Company, with local plant at 1834 Millard avenue. New company is headed by Charles and Morris Einbund.

Niagara Falls, N. Y.—The International Paper Company, New York, is advancing operations at its Niagara Falls mill, and is planning to increase present working force by about 100 additional persons at early date. Company is also active at its Piercefield, N. Y., mill, where production is being concentrated on high-grade bond papers; one large paper machine is in service on a 24-hour day basis. About 200 persons are now engaged at this plant.

Kalamazoo, Mich.—The Kalamazoo Vegetable Parchment Company, Parchment, near Kalamazoo, is said to have plans nearing completion for proposed new addition to mill, recently referred to in these columns, consisting of a three-story structure, 60 x 225 feet, for storage and distributing service. It is reported to cost close to $40,000, with equipment.

Port Leyden, N. Y.—The Johnston Pulp Corporation has been organized by John E. Johnston, Port Leyden, and associates, with capital of 200 shares of stock, no par value, to operate a local ground wood pulp mill. New company is understood to be arranging to take over the mill and property of Johnston & Son, idle for some time past, and will improve and occupy for plant.

Holyoke, Mass.—The American Writing Paper Company is holding to an active production schedule at its mills, comparing favorably with September operations, when gross production approximated 6,460,000 pounds. Sales during September exceeded plant output by about 35,000 pounds, and were 40 per cent more than in the same month a year ago. Unfilled orders on hand exceed 3,000,000 pounds.

Boston, Mass.—William A. Wedge & Son, Inc., recently organized with capital of $100,000, plans operation of a local plant for manufacture of paper boxes and allied containers. New company is headed by William A. Wedge, president; and Leland B. Wedge, 285 Porter street, Melrose, Mass., treasurer and representative.

Tonawanda, N. Y.—The Spaulding Fibre Company, Inc., has developed a new hard vulcanized fiber at its local mill, and plans extensive production of new material at early date.

Emeryville, Cal.—The California Container Company, recently formed to manufacture paper and paperboard boxes and containers, has active work in progress on extensions and improvements in former local mill of the Rheem Manufacturing Company, Horton street, which will be used as new plant. Machinery and equipment will be installed in near future. As previously reported in these columns, entire project will cost close to $100,000, with equipment. Large capacity will be developed. C. J. Munes is president.

Indian Orchard, Mass.—The Sample-Durick Company, Inc., 370 Birnie avenue, Springfield, Mass., manufacturer of folding paper boxes, cartons and kindred products, has leased a mill at Indian Orchard, where operations are being transferred and will be concentrated in future. Acquired property provides for large additional floor space, providing for about double former capacity. Equipment and manufacturing facilities will be increased at new location.

Dummondville, Que.—Canadian Celanese, Ltd., manufacturer of cellulose rayon products, has plans maturing for extensions at mill for enlarged output. Equipment will be installed to develop about 25 per cent increase over present capacity. Work is reported to cost close to $100,000, including machinery.

Carnegie, Pa.—The Superior Paper Products Company, Carnegie, manufacturer of corrugated paper containers, boxes, etc., has approved plans for construction of a new plant in Robinson Township, consisting of fac-

tory unit and office building, estimated to cost close to $140,000, with equipment. Superstructure will be placed under way at once. General building contract has been awarded to the Rust Engineering Company, Koppers Building, Pittsburgh, Pa.

Philadelphia, Pa.—The Light Corrugated Box Company, Trenton avenue and Venango street, Albert A. Light, head, has leased space in building at Erie avenue and Spivia street, totaling about 40,000 square feet floor area, and will occupy for a new storage and distributing unit.

Cincinnati, Ohio—The Seinsheimer Paper Company, 120 York Street, has plans for extensions and improvements in steam power house, with installation of additional equipment. No estimate of cost has been announced. Bids have been asked for building work. Carl J. Kiefer, Schmidt Building, city, is consulting engineer.

New York, N. Y.—The Majestic Paper Corporation, 138 Franklin street, has arranged a new lease for entire six-story and basement building at 136-42 Franklin street, totaling about 40,000 square feet of floor space, to be occupied for storage and distribution, and company headquarters.

San Francisco, Cal.—The Security Lithograph Company, paper products, paper boxes, etc., has begun construction of a new plant on Washington street, to be two-story, estimated to cost about $50,000, with equipment. General contract has recently been awarded to David Paganini, 519 California street, San Francisco. H. A. Minton, 525 Market street, is architect, and L. H. Nischkian, last noted address, is engineer.

Old Hickory, Tenn.—The duPont Cellophane Company, manufacturer of transparent wrapping materials, is running on a capacity schedule with full working force in all departments at local mill. Production will be continued on this basis for an indefinite period. In conjunction with the duPont Rayon Company, manufacturer of cellulose rayon products, with adjoining plant, employment is being given to about 5,000 operatives.

Buffalo, N. Y.—R. W. Jones has secured permission to occupy the building at 56 Purdy street for new plant for the manufacture of paper boxes and containers. Improvements will be made in structure and equipment provided at early date.

Grand Rapids, Mich.—The American Box Board Company, manufacturer of box boards and kindred products, is pushing construction on a new one-story addition to plant, to be used for general production. It is proposed to place unit in service in near future.

Ridgefield Park, N. J.—The Densen Carton Company, Industrial avenue, manufacturer of paper boxes and containers, has work under way on new addition to plant, for which general contract recently was let to the Cannie Construction Company, 56 Bergen avenue, same place, as previously reported in these columns. It is proposed to have the structure ready for occupancy in near future. It will be one-story, 100 x 120 feet, reported to cost close to $40,000, with equipment.

Edmonton, Alta.—The Western Straw Paper Company, 10638 91st avenue, is said to have plans maturing for new local plant for the manufacture of a line of wrapping papers. A department will also be established for the production of insulating paper stocks. It is proposed to take over a local building and install necessary equipment. Initial plant is reported to cost close to $30,000, with equipment. G. K. Guild is one of the heads of the company and will be in charge of program.

Three Rivers, Que.—The Canadian International Paper Company, Montreal, Que., has advanced production schedule at its newsprint mill at Three Rivers, and seven of the eight paper-making machines at the plant are now in service. It is expected that the remaining machine unit will be in operation in the near future, developing a capacity schedule at the mill with full working force.

New Companies, Etc.

Rochester, N. Y.—The Starline Paper Products Corporation has been incorporated with a capital of $50,000, to manufacture and deal in paper goods of various kinds. The new company is headed by Edward W. and Edward G. Rice, 36 Alexander street, city.

Cleveland, Ohio—The E. H. Silbreman Paper Company has been chartered with capital of 100 shares of stock, to deal in paper products of different kinds. The incorporators include Neilson F. Jacobs and William H. Rosenfeld, 824 Leader Building, city. Last noted is representative.

New York, N. Y.—The Perfect Carton Opener Sales Corporation has been organized with capital of $10,000, to manufacture special openers for paper cartons, boxes, etc. The incorporators include Fred J. Schmidt, Pearl River, N. Y., and Harry C. Kayser, 860 Park avenue, Elizabeth, N. J. Company is represented by Leubusher & Kayser, 11 Park Place, New York.

Clifton, N. J.—The Clifton Paper Mills, Inc., operated by Harry N. Davidson and William G. Fox, receivers, has announced an additional 19 per cent available to be paid on claims of creditors, and the Federal Court has issued an order authorizing the distribution. This makes a total of 49 per cent paid on creditors' claims.

Milwaukee, Wis.—The Excel Company has been chartered with capital of $150,000, to manufacture and deal in paper products of various kinds. The incorporators are Richard H. Tyrrell and Kenneth F. Webster, 213 West Wisconsin avenue, Milwaukee.

Chicago, Ill.—The Chicago Fibre Box Company has filed notice of company dissolution under state laws.

Brooklyn, N. Y.—The Pearl Tissue Mills, Inc., has been organized with capital of $100,000, to manufacture and deal in tissue paper stocks of various kinds. New company is headed by Joseph B. Diamond, 2215 Ocean avenue, and Solomon Diamond, 891 East Fourteenth street, both Brooklyn.

Charlotte, N. C.—The Utility Card Company has been incorporated to manufacture card stocks and kindred paper products. The incorporators are M. P. McGuinn and C. A. Cochran, Law Building, Charlotte. Last noted is company representative.

Fitchburg, Mass.—The Universal Paper Company, Inc., has been incorporated with capital of $25,000, to manufacture and deal in paper goods. Edward Jardus, 497 North street, Fitchburg, is president and treasurer; Joseph M. Kopka is vice-president.

New York, N. Y.—Bert C. Miller, Inc., has been incorporated with capital of $25,000 and 1000 shares common stock, no par value, to manufacture and deal in paper products of various kinds. New company is headed by Bert C. Miller and is represented by Herman Goldman, 120 Broadway, New York, an attorney.

Camden, N. J.—The Atlantic Container Company has been incorporated with capital of $200,000 to manufacture paperboard boxes and other kindred products. The incorporators are A. W. Roberts and W. E. Morgan. Company is represented by Herbert J. Koehler, 528 Cooper street, Camden.

Baltimore, Md.—The International Fiber Machine Corporation, Keyser Building, has been incorporated to manufacture machinery for production of fiber materials. The incorporators are Elmer E. Denhard and Thomas B. Athey, 3301 Elgin avenue, Baltimore.

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Henry J. Berger
Editor

Ronald G. Macdonald
Editor Technical Section

Herbert J. Laughton
Associate Editor

Thomas J. Burke, C. A.
Editor Cost Section

Lynne M. Lamm,
Washington Correspondent

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PAPER INDUSTRY IS IN THE BEST POSITION IN TWO YEARS

Conditions in the paper industry have paralleled, in a large measure, the general business trend. In the outburst of buying activity during the early Summer, when inflation ideas were rampant and prices were being carried upward rapidly, there was a rush to replenish stocks, which had been allowed to reach the point of exhaustion, and there was heavy buying against rather long-distance requirements. By the close of September, this buying fervor had spent most of its force, and since that time covering has been confined to moderate current replacement needs. The present levelling-off process is considered advantageous for the trade, as considerable hesitation has appeared because of the delay in signing the codes for the paper and other industries.

Compared with conditions prevailing a year ago at this time, when the industry was harassed by the most disastrous price situation in its history, and tonnage and dollar volume of paper sales were receding uninterruptedly, the progress which has been made since April has been definite and pronounced. In addition, the outlook is more favorable than at any time since 1929, most firms are in a better financial position and profit possibilities will be enhanced by the closer cooperation among manufacturers which will result from the adoption of the code. After present stocks will have been depleted, business is expected to proceed at a more even keel, with few price fluctuations, which will tend to make conditions more satisfactory in all branches, according to a survey of the paper industry, which has just been completed by Dun & Bradstreet, Inc.

"During the summer months, most of the paper mills practically were operating at capacity," the survey continues. "Starting with June and continuing to the latter part of July, a large volume of orders was placed with mills by distributors, mainly in anticipation of price advances. Stocks of paper merchants were low and consumers' stocks also needed replenishing, making brisk business in all divisions. As orders grew more voluminous, mills were rather hesitant about accepting these at the low prices current, and adopted a ruling that future business could be placed subject to prices prevailing at the time of delivery or subject to any extra cost due to the N. R. A. These restrictions soon stopped the flood of orders received by the mills, although sufficient business had been booked to keep operations undiminished throughout the summer.

"After prices had been advanced on most items, and wholesalers and retailers were fairly well stocked, business dropped off perceptibly in September and the downtrend continued during October. In paper board mills, however, operations still are proceeding at near capacity, while demand for boxboard is fairly persistent. Fine paper mills are less active, but output of tissues continues in good volume. The wide increase in newspaper advertising is reflected in the heavier demand on newsprint manufacturers. Manufacturers' sales from July 1 to October 1 averaged 35 to 40 per cent higher than during the comparative months of 1932, with practically all holiday contracts placed. While manufacturers of fine print paper find that the increased margin of profit, because of higher prices, is sufficient to defray the advanced costs under the NRA code, this does not hold good for the manufacturers of the cheaper grades.

"The total of wholesale orders during the first nine months ran as high as 20 per cent above last year's record, despite the fact that for the first four months sales dropped below the reduced 1932 level. From June 1 to September 1, orders for industrial and wrapping papers increased almost without interruption, both dollar and tonnage volume rising to the highest level in two years. As much of this activity sprang from the desire to accumulate inventories beyond current needs, because of advancing prices, demand since October 1 has been receding gradually. While the demand from the printing trade for paper has been better than it was last year, the improvement has not been continuous, and unevenness has been particularly in evidence since the latter part of September.

"With retailers, general sales thus far this year have reached a total approximately 25 per cent higher than the comparative 1932 figure, with the sales of wrapping paper and corrugated paper boxes higher by an even wider percentage. To a great extent, the best-selling items have been the cheaper grades. With the lower-priced papers advancing, however, in greater proportion than the higher-priced grades, there already is a strong shift to the latter items. Sales of wrapping and coated paper, towels, drinking cups, and other goods, which come under the general head of expense items, picked up in May and rose continuously until the volume in August reached the highest total in five years. Since the middle of September, there has been a gradual recession, as the buying public has not reacted as

favorably as expected and retailers now are stocked up awaiting further developments.

"Prices of most paper items have been advanced, but the percentage of mark-up has been less than in many other industries," the survey points out. "Those items which had become quite demoralized naturally were the first to be raised, these including chiefly kraft, kraft bags, gummed tape, sulphite bond, the lower grades of stationery stock, some of the book papers, and many materials. Prices in general have increased from 5 to 60 per cent, with the largest mark-ups in corrugated paper boxes, wrapping paper, and industrial grades.

"Collections on current sales are reported as good, and some reductions are being made on old indebtedness; the average approximately is 20 per cent better than for the same period last year."

NRA CODE OF ITS OWN FOR CANADIAN NEWSPRINT PREDICTED

Canadian newsprint executives, according to reports, have been greatly encouraged by the proposals agreed upon in Washington under the NRA for co-operative effort between United States and Canadian newsprint operators in the future conduct of the newsprint industry, as they believe this foreshadows an early end of the newsprint price war. The establishment of an NRA code of its own by the Canadian newsprint industry is prophesied with confidence, and in this matter powerful governmental support is assured.

Premier Taschereau, of Quebec, has given out a statement promising that his government will do everything in its power to see that Quebec producers comply with a minimum price agreement if such is set by the Washington administration, and said he was confident similar cooperation would be given by the Ontario Provincial government. "Selling newsprint at prices which do not cover the cost of manufacture is a sin," he said. "We cannot continue indefinitely to see our forest wealth dissipated without adequate returns. I believe that the publishers will support the administration and the producers in establishing a fair price for newsprint. It is not in their best interests to have newsprint sold at less than cost. A fair price is to their advantage and I believe the publishers will give their co-operation to any agreed plan."

Paper Mill Employment Higher

August employment in 400 paper and pulp mills totaled 91,433, an increase of 8.5 per cent over July and 23 per cent over August of last year, according to reports to the Bureau of Labor Statistics, Department of Labor. August weekly payrolls in these mills amounted to $1,787,425, an increase of 11.5 per cent over July and of 39.4 per cent over August of last year.

Reports from 312 paper box factories gave their August employment at 24,653, an increase of 10.5 per cent over July and of 29.3 per cent over August of last year, while the weekly August payrolls in these plants amounted to $432,885, an increase of 8.8 per cent over July and of 35.4 per cent over August, 1932.

Bartram Paper Products in New Plant

[FROM OUR REGULAR CORRESPONDENT]

VANCOUVER, B. C., October 30, 1933.—Bartram Paper Products Co. Limited have now taken over possession of their new plant at Vancouver, B. C. Construction of this plant was necessary as the result of the development of the company's export business in paper bags and allied products which it has steadily been building up at Vancouver for the past eight years. The premises of the firm at 1280 Homer Street have now been vacated following the removal of both the head offices, warehouse stock and production divisions to the new and larger establishment where approximately 21,000 square feet of space is available, which represents an increase of almost 25% over the old premises.

C. M. Bartram, president of the company, has been associated with the manufacturing end of the paper industry for the past forty years. Associated with him are S. G. Gourlay, vice-president, Earle S. Gourlay, secretary-treasurer, and C. A. Bartram, sales manager.

The new plant of the company is two stories in height and occupies an area of 165 x 66 feet. The office and warehouse is located on the ground floor with the machine room on the upper level. Construction of the building is of reinforced concrete with trussed roof and steel sash installations on four sides, as well as a single row of windows in the monitor, thus asuring the fullest possible amount of natural light in all sections of the production departments.

Equally elaborate arrangements have been made for the artificial illumination of the plant, five rows of reflector units being arranged at close intervals. Compressed air lines are provided for rapid cleaning of the machines and for pressing the bundles of paper bags into compact packages. Unit heaters have been suspended from the ceiling and these are equipped with a thermostat for automatic control of temperature in the paper making and printing departments.

The Bartram Paper Products are engaged in the production, printing and packing of paper bags of all descriptions ranging from the smallest size to fifty-pound flour containers. Its printing presses are capable of two and three color work and the firm makes its own mats and casts for these presses. It also produces the rubber casts within its plant which are used with the analine in the special high speed three-color unit in the printing department.

Adhesive used by the company in the production of its paper bags is also manufactured within the plant, three vats with a capacity of 875 gallons each being installed, together with boiler and other equipment, in a room on the manufacturing floor.

In addition to paper bags the firm also produces glassine bags, carton liners, all varieties of grease proof parchment and wax paper bags, and allied lines. These goods are shipped to a large domestic market and are also exported to the British West Indies, Africa, Central and South America, the British East Indies, and India and the Orient.

Oconto Falls Pulp Mill to Reopen

APPLETON, Wis., October 30, 1933.—After a shutdown for three years, the pulp mill of the Falls Manufacturing Company, Oconto Falls, Wis., is to be reopened, probably this week. The mill is one of the Continental Paper and Bag Corporation group. Approximately thirty men will be placed at work immediately, according to A. B. Hansen, manager.

Liquid Caustic Soda

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***The* MATHIESON ALKALI WORKS (*Inc.*), 250 PARK AVE., NEW YORK, N. Y.**

Section of the
Technical Association of the Pulp and Paper Industry
Edited by Ronald G. Macdonald, Secretary

Analysis of Salt Cake*

The principal use of salt cake in the pulp and paper industry is in the manufacture of sulphate pulp. Salt cake is an anhydrous sodium sulphate which contains varying amounts of impurities. The principal impurities usually are sulphuric acid, common salt, and sulphates of Fe, Al, Ca and Mg. "Chrome Salt Cake," obtained as a by-product in making chromic acid, has a yellow color and contains $Na_2Cr_2O_7$ (and/or Na_2CrO_4).

A complete analysis of salt cake is somewhat complicated and involves a considerable number of determinations, as outlined below. Since some mills are mainly interested in the acidity and the Na_2SO_4 content, directions for a "short analysis" are also given.

Preparation of Sample

Mix the sample thoroughly, breaking down or grinding any lumps; quarter down to about 100 grams; grind the quartered portion, if necessary, to about 60-mesh or finer; and place in a separate stoppered bottle.

COMPLETE ANALYSIS

Moisture

Weigh 10 grams of the prepared sample in a flat-bottomed dish of porcelain, glass or platinum and dry to constant weight at 100-105 deg. C. (Four hours is usually sufficient.) Let the dish and contents cool in a desiccator before weighing and make the final weighing rapidly. Calculate the loss in weight to percentage and report as Moisture.

Insoluble Matter

Weigh 50 grams of the prepared sample into a 400 or 500-cc. beaker. Add about 250 cc. of boiling water and stir well for 5-10 minutes. Filter at once through a filter paper which has been previously dried at 105 deg. C., cooled and weighed in a weighing bottle, collecting the filtrate in a liter volumetric flask. Wash the residue and the filter paper thoroughly with hot water until a few drops of the washings give no test for sulphates. Place the filter paper and contents in the weighing bottle and dry to constant weight at 100-105 deg. C. Calculate the percentage of insoluble matter.

Cool the filtrate and washings in the liter flask to room temperature, dilute to the mark at 20 deg. C. and mix thoroughly. Call this Solution *A*.

Acidity

Pipette 100 cc. of solution *A* (equivalent to 5 grams of the sample) into a beaker or flask, dilute with an equal volume of water, add about 1 cc. of phenolphthalein indicator, and titrate to a pink color with 0.1 N NaOH. Calculate the titration to percentage of H_2SO_4 and report as acidity, Calculated as H_2SO_4.

Calculation: 1 cc. 0.1 N NaOH = 0.0049 gram H_2SO_4.

NOTE: This titration gives the total acidity or alkali-consuming power, and includes not only the free H_2SO_4 present in the material but also the acidity due to sulphates of Fe and Al, and of any bichromate. The actual free H_2SO_4 may be closely approximated by calculating the amount of H_2SO_4 due to the various impurities and subtracting from the percentage of acidity as H_2SO_4.

Factors: H_2SO_4 equivalent = Al_2O_3 × 2.89
= FeO × 1.36
= Fe_2O_3 × 1.84
= $Na_2Cr_2O_7$ × 0.375

Chloride

To the solution which has been titrated for acidity add a drop or two of methyl orange or methyl red indicator, make very slightly acid with a few drops of dil. H_2SO_4, and bring back to neutrality by adding about 1 gram of powdered $CaCO_3$ and stirring. Set the flask on a white surface or transfer the contents to a porcelain dish; add 10 drops of K_2CrO_4 indicator solution (10 per cent) and titrate with 0.1 N $AgNO_3$ until the brick-red coloration due to Ag_2CrO_4 remains just visible after stirring. Calculate the titration to percentages of Cl and NaCl (and also to the equivalent of Na_2O for use in the final calculations).

Calculations: 1 cc. 0.1 N $AgNO_3$ = 0.00355 gram Cl.
= 0.00585 gram NaCl.
= 0.00310 gram Na_2O.

Ferrous Iron

To 5 grams of the original prepared sample in an Erlenmeyer flask add 100 cc. of warm water and 5 cc. of conc. H_2SO_4. Warm on the steam bath a few minutes, just long enough to dissolve all soluble matter. Cool under a water tap and titrate at once with 0.1 N $KMnO_4$. Calculate the titration to percentages of FeO and $FeSO_4$ (and also the equivalent of Fe_2O_3).

Calculations: 1 cc. 0.1 N $KMnO_4$ = 0.00718 gram FeO.
= 0.0152 gram $FeSO_4$.
= 0.00798 gram Fe_2O_3.

Ferric Iron

Pipette 100 cc. of solution *A* (equivalent to 5 grams of the sample) into a 250-cc. beaker, add a few drops of conc. HNO_3, cover with a watch glass, and boil a few minutes to oxidize the Fe. Add 5 cc. of conc. HCl or about 1 gram of NH_4Cl. Then add slowly dil. NH_4OH in slight excess. Boil until the odor of NH_3 is nearly but not quite gone, filter, and wash the residue thoroughly with hot water. Save the filtrate. Place the filter paper in a weighed platinum crucible; dry in an oven; smoke off the filter paper; ignite the residue over a Meker burner to

TAPPI SECTION, PAGE 211

* This method has been approved as a tentative standard by the Non-Fibrous Materials Testing Committee of the Technical Association of the Pulp and Paper Industry. Send suggestions and criticisms to R. G. Macdonald, 370 Lexington Ave., New York, N. Y.

constant weight; and calculate the percentage of Fe_2O_3+ Al_2O_3.

Add about 2 grams of $KHSO_4$ to the residue in the crucible and fuse quietly over a gentle heat until the melt is clear. Dissolve the melt in warm water, dilute to about 100 cc., add 5 cc. of conc. H_2SO_4, and pass the hot solution through a Jones reductor to reduce the Fe. Cool the reduced solution and titrate at once with 0.1 N $KMnO_4$. Calculate the percentage of total Fe in terms of Fe_2O_3 and subtract the amount of Fe_2O_3 equivalent to the FeO previously determined. The difference is the ferric Fe in terms of Fe_2O_3. (Calculate also the equivalent amount of $Fe_2(SO_4)_3$.)

Calculations: 1 cc. 0.1 N $KMnO_4$ = 0.008 gram Fe_2O_3
$Fe_2O_3 \times 2.50 = Fe_2(SO_4)_3$.

Alumina

Subtract the percentage of total Fe in terms of Fe_2O_3 from the percentage of mixed oxides, $Fe_2O_3 + Al_2O_3$, and report the difference as Alumina. (Calculate also the equivalent amount of $Al_2(SO_4)_3$.)

Calculation: $Al_2O_3 \times 3.36 = Al_2(SO_4)_3$.

Lime

Heat the filtrate from the Fe and Al hydroxides to boiling and add 2 cc. of conc. NH_4OH and 10 cc. of 4 per cent $(NH_4)_2C_2O_4$ solution. Let stand one-half hour or until the precipitate settles clear. Filter and wash thoroughly with hot water. Char off the filter paper in a weighed platinum crucible and finally ignite to constant weight over a Meker burner. Cool in a desiccator and make the final weight rapidly. Calculate the weight to percentage of CaO. (Calculate also the equivalent amount of $CaSO_4$.)

Calculation: $CaO \times 2.43 = CaSO_4$.
NOTE: If preferred, instead of igniting the CaC_2O_4 to CaO and weighing, the CaC_2O_4 may be titrated with 0.1 N $KMnO_4$ as described in the method for Analysis of Limestone.

Magnesia

Acidify the filtrate from the lime determination with HCl, concentrate to about 150 cc. and heat to boiling. Add 10 cc. of saturated $NaNH_4HPO_4$ solution and boil for several minutes. Cool to room temperature and add NH_4OH drop by drop with constant stirring until the crystalline precipitate begins to form; then add a moderate excess and continue stirring for several minutes. Let stand in a cool place overnight and filter on a Gooch crucible, previously ignited and weighed. Wash with dil. NH_4OH (1:10) containing a few drops of conc. HNO_3, ignite in a muffle, cool in a desiccator and weigh as $Mg_2P_2O_7$. If a muffle is not available, place the Gooch crucible in a larger platinum crucible and ignite directly over a flame. Do not use sufficient heat to fuse or melt the precipitate. Calculate to percentage of MgO. (Calculate also the equivalent amount of $MgSO_4$.)

Calculations: $Mg_2P_2O_7 \times 0.362 = MgO$.
$Mg_2P_2O_7 \times 1.08 = MgSO_4$.

Chromium Trioxide

Pipette 100 cc. of solution *A* (equivalent to 5 grams) into an Erlenmeyer flask. Add 5 cc. of conc. HCl and 10 cc. of 10 per cent KI solution, and titrate the free iodine with 0.1 N $Na_2S_2O_3$ solution. When the yellow-brown color has nearly disappeared, add a little starch indicator solution and continue the titration to the disappearance of the blue color. From the titration calculate the percentage of CrO_3 and of $Na_2Cr_2O_7$. (Calculate also the equivalent amount of Na_2O.)

Calculations: 1 cc. 0.1 N $Na_2S_2O_3$ = 0.00333 gram CrO_3.
= 0.00437 gram $Na_2Cr_2O_7$.
= 0.00207 gram Na_2O.

Total Soda

(a) Chrome Salt Cake: To 100 cc. of solution *A* in a 500-cc. beaker add 10 cc. of alcohol and 10-15 cc. of conc. HCl and boil down to half volume to reduce the Cr and remove the bulk of the alcohol. To the hot solution add a slight excess of NH_4OH and 10 cc. of 4 per cent $(NH_4)_2C_2O_4$ solution. Boil until the odor of NH_3 is nearly gone; let stand about 15 minutes; filter and wash thoroughly with hot water, collecting the filtrate and washings in a 250-cc. volumetric flask. Discard the precipitate which contains the Al, Cr, Fe and Ca. Cool the solution, dilute to 250 cc. at 20 deg. C., and mix thoroughly. Call this Solution *B*.

Pipette 50 cc. of solution *B* (equivalent to 1 gram of the sample) into a weighed dish, preferably of platinum; evaporate to dryness on the steam bath; and ignite carefully to avoid spattering, gradually raising the heat until no more fumes of NH_4=salts or SO_3 come off. Cool, moisten the residue with a freshly prepared nearly saturated solution of $(NH_4)_2CO_3$ in water, again evaporate on the steam bath and ignite strongly over a Meker burner. Cool in a desiccator, weigh, and calculate to percentage.

The residue is $Na_2SO_4 + MgSO_4$. Subtract the percentage of $MgSO_4$, previously determined, and calculate the difference to Na_2O.

Calculation: $Na_2SO_4 \times 0.4364 = Na_2O$.

(b) Ordinary Salt Cake: In the absence of Cr, omit the preliminary boiling with alcohol. Heat 100 cc. of solution *A* to boiling; add 10 cc. of conc. HCl, then a slight excess of NH_4OH and 10 cc. of 4 per cent $(NH_4)_2C_2O_4$ solution; and proceed as above.

Sulfur Trioxide

Pipette 25 cc. of solution *B* (equivalent to 0.5 gram of the sample) into a 400-cc. beaker. Add a drop or two of methyl red and then neutralize the solution carefully with very dilute NH_4OH. To the neutral solution add 300 cc. of water and 2 cc. of dil. HCl (1:18), and heat to boiling. Add to the boiling solution 25 cc. of 10 per cent $BaCl_2$ solution, drop by drop from a pipette. Stir well and set aside overnight at room temperature, protected from fumes. Filter and wash with hot water until 25 cc. of the filtrate show not more than a slight opalescence with $AgNO_3$ solution. Place the filter and precipitate in a weighed platinum crucible and heat very slowly and carefully over a low flame to char the filter paper without allowing it to catch fire. After completing the charring, ignite until white over an ordinary burner, with the crucible uncovered. Cool and moisten the precipitate with a few drops of dil. H_2SO_4. Heat very carefully to drive off the acid and finally ignite to constant weight, cooling between weighings in a desiccator. Calculate the weight of $BaSO_4$ to percentage of SO_3.

Calculation: $BaSO_4 \times 0.3430 = SO_3$.

Final Calculations

From the total Na_2O subtract the Na_2O equivalent to the NaCl and the $Na_2Cr_2O_7$; calculate and report the remaining Na_2O as Na_2SO_4.

From the total SO_3 subtract the SO_3 equivalent to the Na_2SO_4, $Al_2(SO_4)_3$, $FeSO_4$ and $Fe_2(SO_4)_3$; calculate and report any excess of SO_3 as free H_2SO_4. (The SO_3 equivalent of each of the sulphates is obtained by subtracting the corresponding oxide percentage from the sulphate percentage; e.g., 1.52 per cent $FeSO_4$ — 0.72 per cent FeO = 0.80 per cent SO_3.)

Form of Report

It is suggested that the results of a complete analysis be reported in the following form:

	Per cent
Moisture, loss at 100 deg. C.	
Insoluble in Water	
Acidity, calculated as H_2SO_4	
Chloride, Cl	
Ferrous Oxide, FeO	
Ferric Oxide, Fe_2O_3	
Alumina, Al_2O_3	
Lime, CaO	
Magnesia, MgO	
Chromium Trioxide, CrO_3	
Sulphur Trioxide, SO_3	
Combined as follows:	
Sodium Chloride, NaCl	
Sodium Bichromate, $Na_2Cr_2O_7$	
Aluminum Sulphate, $Al_2(SO_4)_3$	
Ferrous Sulphate, $FeSO_4$	
Ferric Sulphate, $Fe_2(SO_4)_3$	
Calcium Sulphate, $CaSO_4$	
Magnesium Sulphate, $MgSO_4$	
Sodium Sulphate, Na_2SO_4	
Free Sulphuric Acid, H_2SO_4	

SHORT ANALYSIS

Prepare the sample as previously described, except that it may be quartered down to about 25 grams before the final grinding.

Acidity

Weigh 5 grams into a 300-cc. Erlenmeyer flask, add 100 cc. of hot water and heat until all soluble matter has dissolved. Cool under a water tap and pour into a 500-cc. porcelain dish, using 100 cc. of water in small portions to rinse the flask and complete the transfer. Add about 1 cc. of phenolphthalein indicator and titrate to a pink color with 0.1 N NaOH.Calculate the titration to percentage of H_2SO_4 and report as acidity, calculated as H_2SO_4.

Calculation: 1 cc . 0.1 N NaOH = 0.0049 gram H_2SO_4.

Sodium Chloride

Follow the procedure previously described under Chloride. Calculate the titration to percentage of NaCl, and also to the equivalent amount of Na_2SO_4.

Calculation: NaCl × 1.215 = Na_2SO_4.

Sodium Bichromate

If the material contains Cr, warm a 5-gram sample with 100 cc. of water in a 300-cc. Erlenmeyer flask until all soluble matter is dissolved, cool to room temperature and proceed as described previously under Chromium Trioxide. Calculate the percentage of $Na_2Cr_2O_7$ and also the equivalent percentage of Na_2SO_4.

Calculation: $Na_2Cr_2O_7$ × 0.542 = Na_2SO_4.

Sodium Sulphate

Treat 5 grams of the sample in a 500-cc. beaker with 100 cc. of hot water, 5 cc. of conc. HCl and a few drops of conc. HNO_3, and stir until all soluble matter is dissolved. Boil a few minutes to oxidize the Fe. If the material contains Cr, add 10 cc. of alcohol and boil down to half volume. Then add a slight excess of NH_4OH and 10 cc. of 4 per cent $(NH_4)_2C_2O_4$ solution and proceed as previously described under Total Soda. Calculate the percentage of the final residue, which contains all the Na as Na_2SO_4 and all or part of the Mg as $MgSO_4$. (The latter is usually very small and is disregarded.) Subtract the Na_2SO_4 equivalent of the NaCl and of the $Na_2Cr_2O_7$, and report the difference as Sodium Sulphate.

New TAPPI Members

The Executive Committee of the Technical Association of the Pulp and Paper Industry has announced the following elections to membership:

T. M. Barry, assistant to the president, Fraser Companies Ltd., Edmundston, N. B., is a 1921 graduate of the University of Toronto. Mr. Barry was formerly associated with the Lincoln Mills Ltd., Merritton, Ontario; Spanish River Pulp and Paper Mills Ltd.; Espanola and Sault Ste. Marie, Ontario; and the Spruce Falls Power and Paper Company, Kapuskasing, Ont.

Donald H. Hooper, in charge of technical control for the Pacific Mills Ltd., Ocean Falls, B. C., was formerly associated with Powell River Company, Powell River, B. C.

Charles A. Minor, chemist, Collins Paper Manufacturing Company, N. Wilbraham, Massachusetts, a chemist in the consulting chemical laboratories of J. E. Minor.

Seth Wheeler, Jr., consulting engineer, Albany, N. Y., attended Stevens Institute of Technology, and was for twenty-eight years associated with the A. P. W. Paper Company holding positions from superintendent to president.

Jack F. Wright, technical salesman, National Aniline and Chemical Company, Boston, Massachusetts, attended Miami University and was formerly associated with the Crystal Tissue Company, Middletown, Ohio; E. I. duPont de Nemours & Company, Carney's Point, N. J.; and H. M. Meincke Company, Chicago, Ill.

Byrd W. Davenport, chemist, Manchester Board and Paper Company, Richmond, Va., is a 1931 graduate of the University of Virginia and was formerly chemist for the Albemarle Paper Company of Richmond.

Harry G. Davis, chief chemist, Waterfalls Paper Company, Mechanic Falls, Maine, attended the University of Maine and was formerly chemist for the Borregaarde Company, Sarpsborg, Norway.

Louis J. De Bauche, Jr., is chemist, Hoberg Paper and Fibre Company, Green Bay, Wis., with whom he has been associated for the past eight years.

Frank B. Harlow, assistant chemist, sulphite division, Penobscot Chemical Fibre Company, Great Works, Maine, is a 1929 graduate of Bowdoin College and was formerly research engineer for the U. S. Bobbin and Shuttle Company, Manchester, N. H.

The "New Deal" and the Patent Office*

On June 26, 1933 a new administration took charge of the Patent Office. The new commissioner, Conway P. Coe, is the youngest man ever to have served in this post. As stated in the Journal of the Patent Office Society, Mr. Coe's selection is typical of the recent "New Deal" appointments. The new commissioner is a former assistant examiner and prior to his appointment was an active patent practitioner in Washington, D. C.

A committee including several prominent patent attorneys has been appointed by the Hon. Daniel C. Roper, Secretary of Commerce, to study conditions in the Patent Office and to make recommendations with respect to securing greater efficiency, better service and improved practice. All those interested in our Patent System have been invited to submit suggestions in order to enable the committee to formulate proposals for the improvement of patent practice and procedure. Mr. Sutton, chairman of the newly appointed committee, has particularly requested the cooperation of the Patents Committee of TAPPI. This affords the association an excellent opportunity to take an active part in the improvement of the patent system.

The Patents Committee of TAPPI accordingly calls upon all members of the association to submit whatever suggestions and criticisms they may have. Letters may be sent to R. G. Macdonald, secretary of TAPPI, 370 Lexington Avenue, New York City, N. Y., or to C. W. Rivise, chairman of TAPPI Patents Committee, 1321 Arch Street, Philadelphia, Pa.

* Contributed as Bulletin 221 by the Patents Committee of the Technical Association of the Pulp and Paper Industry, Charles W. Rivise, Philadelphia, Pa., chairman.

Analysis of Water*

This method applies to the mineral analysis of waters to be used for boilers and for general manufacturing purposes in the pulp and paper industry. It is not intended for drinking waters or those containing unusual substances, such as free mineral acid, borates or phosphates.

The quantity of water which must be taken for analysis depends upon the amount of dissolved solids which it contains. As a general rule, either 0.5 or 1 liter is a suitable and convenient amount of water for evaporation.

Results are usually reported in grains per U. S. gallon. One U. S. gallon of pure water at 60 deg. F. weighs 58,335 grains. When 1 liter of the sample is taken for analysis, therefore, the weight of any ingredient expressed in *centigrams*, multiplied by 0.5833 will give the corresponding number of grains per gallon.

Free Carbon Dioxide

To 250 cc. of the sample contained in a 400 cc. Erlenmeyer flask add 1 cc. of phenolphthalein indicator solution, and titrate rapidly with 0.01 N Na_2CO_3 until a faint pink color persists after gentle shaking. Take care not to breathe into the flask and do not use a flask unnecessarily large. Calculate the titration to CO_2, according to the reaction:

$$Na_2CO_3 + CO_2 + H_2O = 2\ NaHCO_3.$$

Calculation: 1 cc. 0.01 N Na_2CO_3 = 0.00022 gram CO_2.

NOTES: (1) If the sample contains over 45 grains of $NaHCO_3$ per gallon or if the total carbonate hardness is over 10 (corresponding to the equivalent of 5.8 grains of $CaCO_3$ per gallon), it must be diluted with CO_2-free water before titration to prevent the precipitation of $CaCO_3$ and $MgCO_3$ with consequent liberation of CO_2.

(2) Because of the ease with which free CO_2 escapes from water, particularly when present in large amounts, a special sample should be collected for this determination, which should preferably be made at the time of collection. If the analysis cannot be made at the time of collection, approximate results with water not too high in free CO_2 can be obtained on samples collected in bottles completely filled so as to leave no air space under the stopper. Bottled samples should be kept, until tested, at a temperature lower than that of the water when collected. At best, the results of the titration are uncertain because the proper end-point for correct results differs in color with different types of water.

(3) If mineral acids or certain acid salts are present, a correction must be made. This condition, however, is not likely to occur in paper-mill work.

Color

The "true color" of water is considered that part of the apparent color which is due only to substances in solution, i.e., it is the color of the water after filtration. The "apparent color" is the color as viewed by inspection of the original sample. In stating results, the word "color" means the color of the filtered sample, unless otherwise expressed. Color is generally expressed in parts per million on the platinum-cobalt standard.

PLATINUM-COBALT STANDARD:

The Pt.-Co. method of measuring color is the standard and the unit of color is that produced by 1 part of Pt. per million. The ratio of Co. to Pt. may be varied to match the shade in special cases. The proportion given below is usually satisfactory.

Prepare the standard solution, which has a color of 500 as follows: Dissolve in water 1.245 grams of K_2PtCl_6 (containing 0.5 gram of Pt.), 1 gram of crystallized $CoCl_2.6\,H_2O$ (containing 0.25 gram of Co.), and 100 cc. of conc. HCl, and dilute with distilled water to 1 liter. Place varying aliquots of this solution in Nessler tubes and dilute with distilled water to the 50-cc. mark. These dilutions should have colors of 0, 5, 10, 15, 20, 25, 30, 35, 40, 50, 60, and 70, respectively. The tubes must be of such size that the 50-cc. mark is between 20 and 25 cm. above the bottom and at uniform height for all the tubes. Protect these standard tubes from dust and from evaporation when not in use.

Procedure: Fill a clean Nessler tube with the sample to the height equal to that in the standard tubes, and compare the color with the standards. The observation must be made by looking vertically downward through the tubes upon a white surface at such an angle that light is reflected upward through the column of liquid. Estimate the color of the water from the standards which most nearly match it.

NOTES: (1) Waters which have a color darker than 70 must be diluted with distilled water before making the comparison, and the color corrected for the dilution.

(2) Water containing suspended matter must be filtered until no visible turbidity remains. If the suspended matter is coarse, use filter paper; if fine, a Berkefeld filter is recommended. The Pasteur filter must not be used, as it has a decolorizing effect.

RECORDING OF RESULTS:

Record results of color determinations as follows:

Color between	Record to nearest
1 and 50	1
51 and 100	5
101 and 250	10
251 and 500	20

Suspended Matter

If the sample is decidedly turbid or contains an appreciable amount of suspended matter, shake thoroughly and measure out 1 liter. Filter through an ashless filter paper which has previously been dried at 100 deg. C. and weighed in a weighing bottle, collecting the clear filtrate in a clean beaker or flask. Wash the residue on the filter paper once with distilled water and dry at 100 deg. C. in the same weighing bottle. Cool in a desiccator and weigh the total suspended matter.

Ignite the filter paper in a weighted Pt. crucible; cool in a desiccator and weigh. This weight will give the amount of non-volatile suspended matter.

NOTE: A Gooch crucible may be used if preferred, although if the water contains much organic matter or fine silt, these may have a tendency to clog the asbestos mat.

Residue on Evaporation

Evaporate the filtrate obtained above in a weighted Pt. dish on the steam bath. Finally dry in the oven at 105 deg. C. to constant weight. Usually 0.5-1 hour is sufficient. In the case of highly mineralized waters, it is advisable to weigh again after drying at 180 deg. C. Cool in a desiccator and weigh.

NOTES: (1) If the water has a high Mg content, add 25 cc. of 0.1 N Na_2CO_3 solution to prevent hydrolysis of $MgCl_2$ and loss of HCl. Correct for this in the final calculation. 25 cc. 0.1 N Na_2CO_3 = 0.1325 gram Na_2CO_3 = 0.0775 gram Na_2O.

(2) The evaporation may be hurried by gentle boiling on a hot plate or over a free flame on an asbestos mat, taking care to avoid loss by spattering and not to let it go to dryness before transferring to the steam bath. In urgent cases clamp a horizontal glass tube about 0.5 inch above the top of the dish, with the open end at about the center, and connect the other end to suction or a gentle air blast to remove the vapors during evaporation.

Organic and Volatile Matter

Manipulate the dish in the flame of a gas burner with a pair of tongs until the organic matter is burned off at as low a temperature as possible. Cool in a desiccator and weigh. Record the loss as organic and volatile matter.

NOTE: This result will generally be too high, due to loss of CO_2 from carbonates, and is used only as a rough check on the analysis, the actual organic and volatile matter in the final calculation being taken by difference.

Total Mineral Matter as Sulphates

Add a few drops of dil. H_2SO_4 to the above residue in the Pt. dish. (Note here whether there is an effervescence of carbonate.) Manipulate the dish so that the acid will come in contact with all of the residue. If there is a strong effervescence, it is advisable to add a few more drops of the H_2SO_4.

Evaporate to dryness on the steam bath and then to

* This method has been approved by the TAPPI Non-Fibrous Materials Testing Committee as a tentative standard of the Technical Association of the Pulp and Paper Industry. Send suggestions and criticisms to R. G. Macdonald, 370 Lexington Ave., New York, N. Y.

fumes of SO_3 on the hot plate. (If no white fumes are obtained, insufficient H_2SO_4 has been added.) Finish the heating carefully over a free flame until the evolution of SO_3-fumes ceases. Let the dish cool and moisten the residue with water. Add a few drops of a freshly prepared solution of $(NH_4)_2CO_3$ to neutralize any possible bisulphates. Evaporate to dryness and heat carefully to drive off the NH_4-salts. Then heat for some time at a red heat to decompose any $FeSO_4$ into Fe_2O_3. Cool in a desiccator and weigh. The combined weight represents the mineral matter as Fe_2O_3, SiO_2, Al_2O_3, $CaSO_4$, $MgSO_4$ and alkaline sulphates. For all ordinary purposes the latter may be considered Na_2SO_4, and is so considered throughout this method.

Silica

Add a few cc. of conc. HCl to the above residue and warm until all the Fe_2O_3 dissolves. Dilute with about twice the volume of water and continue the heating for a short time. During the heating loosen the insoluble matter adhering to the dish with a rubber-tipped rod and stir to hasten the solution. Filter through a small ashless paper and wash the residue with hot water. Place the filter paper containing the insoluble matter in the original Pt. dish and burn off the filter paper, taking care to protect the dish from drafts of air. Ignite strongly, cool in a desiccator, and weigh as SiO_2.

NOTE: If the water is to be used for boiler purposes, it is usually not necessary to determine the SiO_2 separately unless a large amount is present.

Iron Oxide and Alumina

Heat the filtrate from the SiO_2 (or, in case the SiO_2 is not to be determined separately, the unfiltered solution of the sulphates) nearly to boiling. Add a slight excess of NH_4OH and digest on the steam bath until the odor of NH_3 is nearly gone. Filter through a small filter and wash well. Ignite strongly in a Pt. crucible cool in a desiccator and weigh as $Fe_2O_3 + Al_2O_3$ ($+SiO_2$, if not separated).

NOTE: If Mn is suspected to be present, add 5 cc. of strong Br water and boil before adding the NH_4OH to precipitate Fe and Al. In this case the Mn will come down with the Fe and Al after treatment with Br water and NH_4OH, and if it is desired to know the amount, it must be determined in a separate portion of the water as described later and the amount (calculated as Mn_3O_4) subtracted from the total weight of the NH_4OH precipitate.

Iron Oxide

If it is desired to determine the Fe_2O_3 separately, fuse the residue in the crucible with about 1 gram of $KHSO_4$. Dissolve the fusion in water and HCl and determine the Fe_2O_3 colorimetrically with KSCN, matching the color against a standard Fe solution.

REAGENTS:

(1) *Standard Fe Solution:* Dissolve 0.70 gram of Fe $(NH_4)_2(SO_4)_2.6H_2O$ in 50 cc. of distilled water and add 25 cc. of dil. H_2SO_4(1:4). Warm slightly and add $KMnO_4$ solution, little by little until the Fe is completely oxidized. Dilute to 1 liter. 1 cc. = 0.0001 gram Fe or 0.000143 gram Fe_2O_3.
(2) *KSCN or NH4SCN Solution:* Dissolve 20 grams in distilled water and dilute to 1 liter.
(3) *Dilute HCl:* Add to conc. HCl (free from HNO_3) an equal volume of distilled water. This solution is about 6 N.
(4) *$KMnO_4$ Solution:* Dissolve 6.30 grams in distilled water and dilute to 1 liter.
(5) *Conc. HCl:* Free from Fe.

PROCEDURE:

Treat the fusion in the crucible with a little hot water until nearly dissolved, then add 5 cc. of dil. HCl (1:1) and continue warming until solution is complete, swirling the crucible gently to bring the hot acid in contact with all the residue. Rinse the hot solution into a 50-cc. Nessler tube, filtering if necessary. Add a drop or two of $KMnO_4$ solution. If the pink color does not last for at least 5 minutes, add more, drop by drop.

Cool the oxidized solution and dilute to the mark. Have the Fe standards ready (see below) and add 5 cc. of the KSCN solution to the sample and to each of the standards, and compare at once.

NOTE: Directions should be followed exactly, since the color is deepened by an excess of KSCN, is diminished by excess of acid, and fades quickly on standing.

Preparation of Fe Standards: Place in matched 50-cc. Nessler tubes an amount of $KHSO_4$ equivalent to that used in fusing the Fe residue, dissolved in a small amount of distilled water. Add measured volumes (0.5 to 4.0 cc.) of the standard Fe solution covering the range of standards required for the sample; dilute to about 40-cc.; add 5 cc. of dil. HCl (1:1) and 1-2 drops of $KMnO_4$ solution to each tube; and dilute each to the mark. To each of these tubes, including the sample, add 5 cc. of KSCN solution, mix, and compare immediately the colors developed. These standards are not permanent.

Alumina

Ordinarily Al_2O_3 is not reported separately. If, however, the colorimetric determination of Fe leaves considerable to be accounted for in the NH_4OH precipitate, the difference may be considered as Al_2O_3.

Lime

Heat to boiling the filtrate from the NH_4OH precipitate. Add 5 cc. of $(NH_4)_2C_2O_4$ reagent solution and digest on the steam bath until the precipitate has settled. Filter through a small ashless filter, wash well with hot water, ignite thoroughly in a Pt. crucible completing the ignition over a blast lamp or Meker burner. Cool in a desiccator and weigh rapidly as CaO.

NOTE: Instead of igniting the CaC_2O_4 it may be titrated with 0.1 N $KMnO_4$ as follows: In a 400-cc. beaker place about 125 cc. of distilled water and add 5-7 cc. of conc. H_2SO_4. Drop the moist filter paper containing the CaC_2O_4 into this and heat to about 70 deg. C. Stir to effect the decomposition of the CaC_2O_4, but avoid excessive disintegration of the paper. Titrate the hot solution, with constant stirring, with 0.1 N $KMnO_4$ until a permanent pink color forms.
Calculation: 1 cc. 0.1 N $KMnO_4$ = 0.0028 gram CaO.

Magnesia

Make the filtrate from the CaO determination slightly acid with HCl and evaporate to about 175 cc. Cool, and add 25 cc. of a 10 per cent. solution of $(NH_4)_2HPO_4$. (Instead of this, Na_2HPO_4 or $NaNH_4HPO_4$ may be used.) Then add slowly, with constant stirring, conc. NH_4OH until neutral, finally adding about 2 cc. in excess. This is best done from a burette or Mohr pipette. Let stand over night, if possible, or cool in ice water and stir for 0.5 hour. Filter through a weighed Gooch crucible and wash with dil. NH_4OH (1:10). Dry the precipitate and then finally ignite strongly (but not sufficiently to fuse), cool and weigh as $Mg_2P_2O_7$. Calculate to MgO.

Calculation: $Mg_2P_2O_7 \times 0.3621 = MgO$.

Alkali

For all ordinary purposes the alkalies may be regarded as consisting wholly of Na_2O and are obtained by calculation as described later.

Manganese

REAGENTS:

(1) *$AgNO_3$ Solution:* Dissolve 2 grams in water and dilute to 1 liter.
(2) *Ammonium Persulphate.*
(3) *Standard Mn Solution:* Dissolve 0.2877 gram of pure $KMnO_4$ in about 100 cc. of water, add about 5 cc. of dil. H_2SO_4 (1:1), and slowly heat to boiling. Add slowly a sufficient amount of 10 per cent oxalic acid solution to discharge the color. Cool and dilute to 1 liter. 1 cc. of this solution = 0.0001 gram of Mn.

PROCEDURE:

Evaporate 500 cc. of the unfiltered sample, or more if neecssary, to dryness after adding about 1 gram of solid Na_2CO_3. Boil the residue with water, transfer to a filter and wash well with hot water. Dissolve the insoluble residue on the paper in an excess of dil. HNO_3 (1:1), evaporate to dryness, take up with water and add about 1 cc. of conc. HNO_3 and a little of the $AgNO_3$ solution. If a precipitate of AgCl occurs, add more $AgNO_3$ until all the Cl is precipitated. Add an excess of about 10 cc.

of the $AgNO_3$ solution for each mg. of Mn present in the sample. Filter, add to the filtrate 1 gram of $(NH_4)_2S_2O_8$, and place on the steam bath until a pink color develops (usually about 20 minutes). Compare the color developed with standards prepared by treating solutions containing known amounts of the standard Mn solution with the dil. HNO_3, $AgNO_3$ and $(NH_4)_2S_2O_8$.

Sulphur Trioxide

To 200 cc. of the filtered sample, contained in a 400-cc. beaker, add 5 cc. of dil. HCl. Heat to boiling and then add drop by drop with constant stirring 5 cc. of a hot 10 per cent $BaCl_2$ solution. Let stand over night, protected from SO_3 fumes. Filter, wash with hot water, ignite the precipitate, cool, and weigh as $BaSO_4$. When 200 cc. of the sample are taken, the weight of $BaSO_4$ in centigrams gives directly the amount of SO_3 in grains per gallon.

Chlorine

REAGENT:

Standard $AgNO_3$ Solution: Dissolve 2.396 grams of pure $AgNO_3$ crystals in distilled water and dilute to 1 liter. 1 cc. of this solution = 0.0005 gram of Cl.

PROCEDURE:

Measure 100 cc. of the water into a clean porcelain dish. If the Cl is high, use correspondingly less of the sample, diluting with distilled water to a definite volume. A satisfactory end-point cannot be obtained when more than 8 — 10 cc. of the standard $AgNO_3$ solution are required. (If the water contains more than 60 grains of Cl, make the determination gravimetrically, weighing the AgCl.) If the water is found to be acid to methyl orange, add a slight excess of pure $CaCO_3$ (or just neutralize with 0.1 N Na_2CO_3 solution). If the water is not acid to methyl orange, add 2 or 3 drops of phenolphthalein indicator to the sample in the porcelain dish, and if a red color appears, neutralize with approximately 0.1 N H_2SO_4.

Rotate the neutral liquid in the dish to make sure that no portion of any residue on the side walls remains undissolved, rubbing if necessary with a rubber-tipped glass rod. Then add 1 cc. of K_2CrO_4 indicator solution and titrate with the standard $AgNO_3$ solution with constant stirring until the color changes from yellow to a slight orange tint as compared with the color of a blank solution in another dish. The blank should be the same volume of distilled water as the sample under titration, with 1 cc. of K_2CrO_4 indicator added to it. The titration is best conducted under artificial light, either electric or gas.

NOTE: AgCl × 0.2474 = Cl.

Calculation of Results

First calculate all results to grains per gallon. Then calculate the CaO and MgO to $CaSO_4$ and $MgSO_4$, respectively. (Also calculate the Mn, if determined, to $MnSO_4$.) Add to the sum of these the amount of SiO_2, Fe_2O_3, and Al_2O_3 and subtract this total from the total weight of mineral matter calculated as sulphates. Consider the difference as Na_2SO_4 and calculate the equivalent amount of Na_2O.

Calculate the total Cl to NaCl, if there is enough Na_2O to combine with it. If, however, there is an excess of Cl over the Na_2O, calculate the remainder to $MgCl_2$. If the Na_2O is in excess of the Cl, calculate the excess of Na_2SO_4 and then the remainder, if any, to Na_2CO_3. If there is insufficient Na_2O left from the NaCl to combine with all the SO_3, calculate the excess of the latter to $CaSO_4$. If the SO_3 is still in excess, combine it with any MgO not satisfied with Cl; and if there is still an excess, calculate to H_2SO_4. (In this case, of course, the water would show an acid reaction to methyl orange and litmus.) Calculate any MgO or CaO not accounted for by Cl and SO_3 to $CaCO_3$ and $MgCO_3$ respectively. If the Na_2O is in excess of both Cl and SO_3, calculate the excess to Na_2CO_3. The Fe_2O_3 is probably present as $FeSO_4$ but for practical purposes this calculation is unnecessary. The SiO_2 is usually reported as such, although in water containing a considerable amount and also containing Na_2CO_3 it may be present as Na_2SiO_3. The Al and Mn are usually reported as Al_2O_3 and Mn_3O_4.

NOTE: Water containing Na_2CO_3 will be alkaline to phenolphthalein, although even if the water is neutral to this indicator, it may still contain $NaHCO_3$, in which case it will be alkaline to methyl orange. Bicarbonates occurring in the water will be decomposed during the evaporation and appear as carbonates in the evaporation residue.

Form of Report

Report the final results of a complete chemical analysis as follows, unless special circumstances require some modification:

	Grains per U. S. Gallon
Free Carbon Dioxide (CO_2)	
Suspended Matter:	
Organic and Volatile	
Non-Volatile	
Total	
On Filtered Sample	
Silica (SiO_2)	
Alumina (Al_2O_3)	
Iron Oxide (Fe_2O_3)	
Manganese Oxide (Mn_3O_4)	
Lime (CaO)	
Magnesia (MgO)	
Sodium Oxide (Na_2O)	
Sulphur Trioxide (SO_3)	
Chlorine (Cl)	
Probably combined as follows:	
Silica (SiO_2)	
Iron Oxide (Fe_2O_3)	
Alumina (Al_2O_3)	
Manganese Oxide (Mn_3O_4)	
Sodium Chloride (NaCl)	
Sodium Sulphate (Na_2SO_4)	
Sodium Carbonate (Na_2CO_3)	
Magnesium Chloride ($MgCl_2$)	
Magnesium Sulphate ($MgSO_4$)	
Magnesium Carbonate ($MgCO_3$)	
Calcium Chloride ($CaCl_2$)	
Calcium Sulphate ($CaSO_4$)	
Calcium Carbonate ($CaCO_3$)	
Organic and Volatile Matter (by difference)	
Residue on Evaporation	

NOTES: (1) In waters which are to be used for boiler purposes it is sufficient ordinarily to report Fe_2O_3, Al_2O_3 and SiO_2 together, and not separately.

(2) The following are incrusting or scale-forming solids:
- Silica.
- Oxides of Fe and Al.
- Calcium sulphate and carbonate.
- Calcium chloride (corrosive).
- Magnesium sulphate (forms scale only in the presence of $CaCO_3$).
- Magnesium chloride (strongly corrosive).
- Magnesium carbonate.

The following are non-incrusting solids:
- Chlorides, sulphates and carbonates of the alkalies.
- Organic matter.

(3) The general grading of waters for boiler purposes, according to the contents of scale-forming matter, is as follows:

Less than 10 grains per gallon	Good.
10 to 20 grains	Fair.
20 to 30 grains	Poor.
30 to 40 grains	Bad.
Over 40 grains	Very bad.

(4) Grains per gallon × 10/7 = pounds per 10,000 gallons.

Factors

The following factors will be found useful in calculating results. They are given to 4 decimal places but for all ordinary calculations 3 significant figures are sufficiently accurate:

Given	Wanted	Factor
$CaCl_2$	CaO	0.5052
CaO	$CaCO_3$	1.7847
CaO	$CaSO_4$	2.4279
$CaSO_4$	CaO	0.4119
Cl	$CaCl_2$	1.5650
Cl	KCl	2.1026
Cl	$MgCl_2$	1.3429
Cl	NaCl	1.6486
CO_2	Na_2CO_3	2.4090
Fe_2O_3	$FeCO_3$	1.4509
$MgCl_2$	MgO	0.4234
MgO	$CaCO_3$	2.4819
MgO	$MgCO_3$	2.0915
MgO	$MgSO_4$	2.9857
$MgSO_4$	MgO	0.3349
Mn	Mn_3O_4	1.3883
Mn_3O_4	$MnCO_3$	1.5070
NaCl	Cl	0.6066
NaCl	Na_2O	0.5303
Na_2CO_3	Na_2SO_4	1.3402
Na_2O	NaCl	1.8858
Na_2O	Na_2CO_3	1.7098
Na_2O	Na_2SiO_3	1.9687
Na_2O	Na_2SO_4	2.2914
Na_2SO_4	Na_2CO_3	0.7462

Given	Wanted	Factor
Na_2SO_4	Na_2O	0.4364
Na_2SO_4	SO_3	0.5636
Na_2SiO_3	Na_2O	0.5079
SiO_2	CO_2	0.7326
SiO_2	Na_2SiO_3	2.0321
SO_3	$CaSO_4$	1.7004
SO_3	$MgSO_4$	1.5036
SO_3	Na_2SO_4	1.7743
SO_2	H_2SO_4	1.2250

SPECIAL DETERMINATIONS

Oil

It is often important to determine the amount of oil in a boiler-feed water as it is generally considered dangerous to allow more oil in the water than 0.5 grain per U. S. Gallon. Samples of water which are to be tested for oil should be collected in gallon glass-stoppered containers, clean and absolutely free from oil.

Upon receipt of the sample, weigh it in the bottle. Transfer the entire sample to a large separatory funnel, which is clean and entirely free from oil, and shake out with about 50 cc. of re-distilled $CHCl_3$ or CCl_4. In case the separatory funnel is not large enough to hold all the sample, 2 funnels may be used; in which case draw off into the second funnel the solvent used in shaking out the water in the first funnel, then add more of the water to the second funnel from the original container and shake out with the same solvent. After the container has been emptied of the water, add to it a fresh 50-cc. portion of the distilled solvent, replace the stopper and shake thoroughly to dissolve any oil which may stick to the sides of the bottle or the stopper. Pour this solvent into the separatory funnel containing the remainder of the solvent and draw the combined extracts off carefully. If the latter is clear and free from water, evaporate it in a weighed flask and dry to constant weight at 100 deg. C. In case the extract is not clear, filter it before evaporating and wash the filter with a fresh portion of solvent.

Dry the original container with a blast of air and weigh it. Calculate the total volume of the sample, considering 1 gram equivalent to 1 cc. Calculate the weight of oil obtained to grains per U. S. Gallon of the water.

$$\textit{Calculation:}\ \frac{\text{Wt. of Oil (grams)}}{\text{cc. of sample}} \times 58{,}300 = \text{grains per gallon.}$$

Hardness

The hardness of water is caused chiefly by the salts of Ca and Mg. The solubility of carbonates of Ca and Mg in a water, beyond certain narrow limits, depends upon the presence of CO_2 and results in bicarbonates. On boiling, the CO_2 is removed and the normal carbonates precipitated. Precipitation, however, is not complete, as the normal carbonates themselves have a slight solubility. The hardness of the water removed by boiling is termed temporary hardness; that which still remains is called permanent hardness, and is due largely to sulphates and chlorides of Ca and Mg.

It is generally sufficient to determine the total hardness of the water. In case the permanent hardness is also desired, boil gently a known volume of the water for one-half hour, let cool, and then restore to its original volume by adding recently boiled and cooled distilled water. Then filter through a dry filter and determine the hardness in the filtrate. This is the permanent hardness. Subtracting it from the total hardness, gives the temporary hardness.

Hardness is expressed in terms of parts of $CaCO_3$ per 100,000. The most accurate method for total hardness is to calculate it from the chemical analysis. It is commonly measured, however, by the soap method. This method is convenient for routine tests but is a measure of the soap-consuming power of the water rather than its true hardness and in some cases the two are considerably different

Calculation Method

Determine the amounts of CaO, MgO, and other metals and express results as parts per 100,000. (This is equivalent to centigrams per liter or to grains per gallon × 1.714.) Then Total Hardness as $CaCO_3$ = 1.785 CaO + 2.482 MgO + 1.880 Fe_2O_3 + 2.945 Al_2O_3.

Soap Method

Reagents: (1) *Standard $CaCl_2$ Solution:* Dissolve 0.2000 gram of pure calcite ($CaCO_3$) in a little dil. HCl, being careful to avoid loss by spattering. Evaporate to dryness several times with distilled water to expel excess of HCl, dissolve in distilled water, and dilute to 1 liter. 1 cc. = 0.0002 gram of $CaCO_3$.

(2) *Standard Soap Solution:* Dissolve 100 grams of dry, white castile soap in 1 liter of 80 per cent alcohol (by volume) and let stand several days before standardizing. (Specially denatured alcohol formula 30, or pure methyl alcohol may be used in place of grain alcohol. Ordinary denatured alcohol, however, is unsuitable as it does not give a clear solution when mixed with water.) Label this "stock soap solution." From this stock solution dilute with 70 per cent alcohol such a quantity that the resulting diluted soap solution will give a permanent lather when 6.40 cc. of it are properly added to 20 cc. of the standard $CaCl_2$ solution. Usually 75-100 cc. of the stock soap solution are required for making 1 liter of the standard soap solution. Pure potassium oleate, made from lead plaster and K_2CO_3, may be used to advantage in place of castile soap.

Standardization: Pipette 20 cc. of the $CaCl_2$ solution into a 250-cc. glass-stoppered bottle and dilute to 50 cc. with recently boiled and cooled distilled water. Then add from a burette 0.2-0.3 cc. of soap solution at a time, shaking the bottle vigorously after each addition, until a lather remains unbroken for 5 minutes over the entire surface of the water while the bottle lies upon its side. It should require 6.40 cc. of the soap solution to accomplish this. Adjust the strength of the soap solution until this is the case. The strength should be determined from time to time to make sure it has not materially changed on standing.

When the soap solution is of the correct strength, the quantity of $CaCO_3$ equivalent to each cc. is shown in Table I.

TABLE I

HARDNESS IN PARTS OF $CaCO_3$ PER 100,000 FOR EACH 0.1 CC. OF SOAP SOLUTION WHEN 50 CC. OF WATER ARE TITRATED

Soap Solution, cc.	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
0.0	...	...	...	...	...	...	...	0.00	0.16	0.32
1.0	0.48	0.63	0.79	0.95	1.11	1.27	1.43	1.56	1.69	1.82
2.0	1.95	2.08	2.21	2.34	2.47	2.60	2.73	2.86	2.99	3.12
3.0	3.25	3.38	3.51	3.64	3.77	3.90	4.03	4.16	4.29	4.43
4.0	4.57	4.71	4.86	5.00	5.14	5.29	5.43	5.57	5.71	5.86
5.0	6.00	6.14	6.29	6.43	6.57	6.71	6.86	7.00	7.14	7.29
6.0	7.43	7.57	7.71	7.86	8.00	8.14	8.29	8.43	8.57	8.71
7.0	8.86	9.00	9.14	9.29	9.43	9.57	9.71	9.86	10.00	10.15

Procedure

Measure 50 cc. of the water into a 250 cc. glass-stoppered bottle. If free CO_2 is present in considerable amount, it should first be removed by aëration. Add soap solution in small quantities and in exactly the same way as described under the standardization. From the results obtained calculate the hardness, expressed as parts of $CaCO_3$ per 100,000.

When adding the soap solution to waters containing Mg salts it is necessary to avoid mistaking the "false" or Mg end-point for the true one. Consequently, after the titration is apparently finished, read the burette and add about 0.5 cc. more of the soap solution. If the end-point was due to Mg, the lather will disappear. Soap solution must then be added until the true end-point is reached. Usually the false lather persists for less than 5 minutes.

When more than 7 cc. of the soap solution are required for 50 cc. of the water, take less of the sample and dilute to 50 cc. with recently boiled and cooled distilled water. This reduces somewhat the disturbing influence of Mg salts which consume more soap than equivalent weights of Ca salts. At best the soap method is not a precise test on account of the varying amounts of Ca and Mg present in different waters. For hard waters, especially in connection with processes for purification and softening, it is advisable not to use this method but to calculate the hardness as previously described.

Additional Information

"Standard Methods of Water Analysis." American Public Health Association, 370 Seventh Ave., New York, N. Y.

"Technical Methods of Analysis," by R. C. Griffin. McGraw-Hill, New York, N. Y.

"Methods of Analysis." Assoc. Official Agr. Chem., Washington, D. C.

Effect of Sulphur Dioxide Gas on Alloys

By G. H. McGregor[1] and J. W. Stevens[2]

Abstract

During the past few years, chrome-nickel steels have been extensively used in the fabrication of materials of construction for use in the manufacture of acid and alkaline pulps as well as various applications throughout the paper mill. With decreased cost and increased knowledge of the handling of chrome-nickel steels, their use is bound to assume extensive proportions in the near future.

In this paper the authors wish to present the results of an experimental test regarding the effect of sulphur dioxide gas on chrome-nickel steels of various compositions, and to compare these results with the behavior of brass, bronze, cast iron, and soft steel under the same conditions of exposure.

Commercial installations have shown the feasibility of the application of chrome-nickel steels of various chromium content for the construction of equipment materials in the manufacture of acid and alkaline pulps. In the sulphite pulp mill the use of chrome-nickel steel has extended to fabrication of direct and indirect circulating and heating systems, top and bottom digester sleeves, bottom crosses, relief lines, acid valves, pumps, screen plates and numerous other applications. In the alkaline pulp mills chrome-nickel steels have been used in the construction of liquor lines, pumps, valves, evaporator tubes, et cetera. In the paper mill, among the possible applications of chrome-nickel steels which undoubtedly will receive considerable attention, might be mentioned chromium plated suction boxes and table rolls, press rolls, drying drums, calender rolls, embossing rolls and possibly the chrome-nickel fourdrinier wire. Each application of this particular steel tends to reduce costs, increase operating efficiency and improve the quality of the product.

In the course of an investigation of the relative stability of various alloys toward conditions existing in the manufacture of sulphite pulp, the writers undertook to determine the effect of hot sulphur dioxide gas on alloys. The results are, therefore, submitted in the hope that they may prove of interest to some members of the Technical Association.

Experimental Work

In instituting these tests the writers were desirous of securing samples of alloys representing the various ratios of chromium and nickel with or without the addition of metals other than iron, such as manganese, tungsten, molybdenum, aluminum and copper. Samples, usually pieces, either cast or sheet, three by four inches and from one-sixteenth to one-quarter inch thick, were secured from numerous noteworthy manufacturers who co-operated very cheerfully in submitting samples of their particular products.

These small samples, representing regular low and high chromium ferrous metals, regular 18-8 with high and low carbon content, 23-11, 28-10, 20-20, and high chrome steels, together with bronzes, brasses, monel metal, et cetera, were placed in the lead lined pipes of the pond type sulphur dioxide coolers. Each sample was separated from the others in order to eliminate as much as possible corrosion due to electrolytic phenomenon. In addition to the alloys, samples of ordinary cast iron and of low carbon sheet steel were used, these to serve as control samples from which comparative observations could be made.

The conditions to which the samples were exposed were approximately as follows: Approximately 200-220 deg. C. gas containing 17-18 per cent sulphur dioxide, 1-2 per cent oxygen and traces of sulphuric anhydride. The presence of sulphuric acid was concluded from the condition of some of the samples which showed corners or edges considerably eaten away when they were in contact with the bottom section of the cooler pipe. The samples were exposed to the hot gas for intervals of thirty days, after which they were removed for observation and measure-

TABLE I
CORROSION TESTS ON VARIOUS ALLOYS

A. Ferrous

Essential Nominal Composition per cent

Metal No.	Fe	Cr	Ni	Cu	Si	C	Mn	W	Al	Zn	Sn
					High Cr no Ni						
1	Fe	16–18	..	..	.5	.12	..	..	..	..	..
2	Fe	16–18	..	..	.5	.10	..	..	..	..	..
3	Fe	16–18	..	..	.5	.10	..	..	..	..	..
4	Fe	25–30	..	..	..	.10	..	..	..	..	..
5	Fe	27–30	..	..	..	.10	..	..	..	..	..
					Regular 18-8—High Carbon						
6	Fe	18	8	..	.5	.2	..	..	..	..	..
7	Fe	18	8	..	.5	.2	..	..	..	..	..
8	Fe	18	8	..	.5	.2	..	..	..	..	..
					Low Carbon						
9	Fe	18	8	..	.5	.10	..	..	..	..	..
10	Fe	18	8	..	.5	.10	..	..	..	..	..
11	Fe	18	8	..	.5	.10	..	..	..	..	..
12	Fe	18	8	..	.5	.10	..	..	..	..	..
13	Fe	18	8	..	.5	.07	..	..	..	..	..
14	Fe	18	8	..	.5	.07	..	..	..	..	..
					Low Carbon and Mo						
15	Fe	18	8	..	.75	.10	2–4	..	..	..	..
16	Fe	18	8	..	.75	.10	1.2–1.7	..	..	..	..
					Regular 23-11 and 20-10						
17	Fe	20	10	..	–1.0	.15	..	..	..	..	..
18	Fe	23	11	..	.5	.2	..	..	..	..	..
19	Fe	23	11	..	.5	.2	..	..	..	..	..
20	Fe	23	11	..	.5	.2	..	..	..	..	..
21	Fe	23	11	..	.5	.2	..	..	..	..	..
					Regular 28-10						
22	Fe	28	10	..	.5	–.2	..	..	..	..	..
23	Fe	28	10	..	.5	–.2	..	..	..	..	..
					Other Cr-Ni Alloys						
24	Fe	20	20	..	–1.0	–.15	..	..	..	..	..
25	Fe	20	20	2.4	3.0	.10	1–1.5	..	..	..	..
26	Fe	6–8	19–20	..	1.0	.3–.4	..	..	..	..	..
27	Fe	6–8	19–20	..	1.0	.3–.4	..	..	..	..	..
28	Fe	6–8	19–20	..	1.0	.3–.4	..	..	..	..	..
29	Fe	24	56	8	..	..	..	..	..	..	..
30	Fe	13	60	..	..	..	17	5	..	..	..
					Non-chromium Ferrous Metals						
31	Fe	..	60	..	..	..	20	..	..	..	..
32	Fe	..	85	5	10	..	..	..	..	..	..
33	Fe	..	67	28	1.0	.3–.5	..	..	..	..	..
34	Fe	..	85	..	..	..	..	..	10	..	..
35	Fe	..	..	..	2.5	2.8	..	..	..	..	..
36	Fe	..	..	..	13	1.0	..	..	..	..	..
37	Fe	..	..	..	14	.85	..	..	..	..	..
38	Fe	..	..	.45	..	.03	.07	..	..	..	..
39	Fe	..	..	..	.003	.012	..	..	..	..	..

B. Non-Ferrous

Metal No.	Fe	Cr	Ni	Cu	Si	C	Mn	W	Al	Zn	Sn	P
40	..	..	18	55	..	..	..	..	..	27	..	..
41	..	..	18	65	..	..	..	..	..	17	..	..
42	..	..	20	75	..	..	..	..	..	5	..	..
43	..	..	..	95.5	..	..	..	..	..	..	4.3	.2
44	..	..	..	91.8	..	..	..	..	..	..	8.0	.15
45	..	..	..	90.0	..	..	..	..	..	..	10.0	..
46	..	..	5	88.5	1.5	..	..	..	..	..	5.0	..
47	..	..	..	90	..	..	..	..	10	..	..	..
48	..	..	..	94–96	3–4	..	1–1.2	..	..	..	..	..
					C. Common Cast Iron Control Sample							
49	Fe	..	..	..	..	1.7–4.3	..	..	..	..	..	..
					D. Common Sheet Steel Control Sample							
50	Fe	..	..	..	..	.1–.3	..	..	..	..	..	..

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[1] Assoc. member TAPPI, formerly in charge of laboratories, Northwest Paper Company, Cloquet, Minnesota.

[2] Sulphite superintendent, Northwest Paper Company, Cloquet, Minnesota.

ment. Most samples remained exposed to the gases until they were obviously corroded to such an extent that a continuance of the test was impractical. The duration of the test was a period of ten months and losses were calculated in terms of loss in grams per square inch per year.

Results

Complete identification and results of exposure are listed in Tables I and II. In Table I we have tried to classify orderly the metals as to nominal composition, as ferrous, non-ferrous, cast iron control, and sheet steel control. Under ferrous are listed the various chromium and chrome-nickel alloys, varying from low chromium content through 16-18 Cr, 18 Cr and 8 Ni, high chromium and high nickel, as well as different types of cast iron. In the non-ferrous classification we have ordinary brasses and bronzes, various combinations of Cu-Ni and high copper metals. The cast iron control sample was ordinary gray iron. The sheet steel control sample was cut from a piece of soft, low carbon sheet steel as used in general construction work.

A critical study of Table II will bring out a few very pertinent observations. In the first grouping, the 16-18 per cent chromium alloys of low manganese content were considerably attached showing considerable pitting and general disintegration. Samples 4 and 5 of this group, being high chromium alloys, withstood the gases much better; the one objection to these high chromium alloys, of course, is their extreme toughness and brittleness.

TABLE II
THE EFFECT OF HOT SO_2 GAS ON VARIOUS ALLOYS

Sample Number	Loss in Grams per Square Inch per Year
A. Ferrous	
High Cr no Ni	
1	30.118
2	24.630
3	26.390
4	4.773
5	7.367
Regular 18-8—High Carbon	
6	19.063
7	24.362
8	23.160
Low Carbon	
9	12.645
10	7.654
11	11.326
12	11.501
13	5.046
14	3.938
Low Carbon and Mn	
15	7.662
16	5.099
Regular 23-11 and 20-10	
17	14.769
18	7.564
19	7.478
20	6.905
21	7.163
22	.....
Regular 28-10	
22	8.195
23	12.749
Other Cr-Ni Alloys	
24	1.717
25	.861
26	13.846
27	14.491
28	22.050
29	.650
30	1.334
Non-Chromium Ferrous Metals	
31	6.026
32	1.516
33	31.350
34	16.168
35	23.736
36	25.218
37	19.836
38	37.050
39	54.740
B. Non-Ferrous	
40	15.007
41	15.865
42	8.367
43	6.725
44	9.279
45	5.185
46	16.586
47	6.216
48	11.819
C. Common Cast Iron Control Sample	
49	53.397
D. Common Sheet Steel Control Sample	
50	45.050

In the second group we find the regular 18-8 alloys. Samples 6, 7 and 8 contained approximately .2 per cent carbon, 9, 10, 11 and 12 approximately .1 per cent carbon, and 13 and 14 the usual .07 per cent carbon. Samples 15-16 possessed low carbon with the addition of minute quantities of molybdenum. It is quite apparent in this group that high carbon tends toward rapid corrosion. Experience has shown that regular 18-8 Cr-Ni alloys of low carbon content are very satisfactory for sulphite work and these results seem to indicate their superiority over the higher carbon alloys of the 18-8 type.

Passing on to the next two groups we find that the 23-11, 20-10 and 28-10 alloys are about as resistant as the low carbon 18-8 alloy. This particular type of alloy is widely recommended for use in large castings and has been found to be quite satisfactory for sulphite work. Top and bottom digester sleeves and blow off crosses of this alloy have given very good service.

The next group of Cr-Ni ferrous alloys includes three various types, including the 20Cr-20Ni alloy, the low Cr high Ni alloy and the fairly high Cr alloy containing a considerable percentage of nickel. In this group it is apparent that the 20-20 alloy and the high Cr very high Ni alloy are quite resistant; on the other hand, the low Cr high Ni alloy is readily attacked by the sulphur dioxide gas.

In the non-chromium ferrous group of alloys we find two types—those containing very high percentages of nickel with or without copper and a group of various regular cast irons. The first group includes samples 31 to 34, the second group samples 35 to 39. Sample 32 of this group appears to be one of the most resistant of all the alloys tested, the various cast irons undergoing considerable decomposition as shown by the high losses recorded.

Section B includes the non-ferrous metals including brasses, bronzes and high copper. A study of this group verifies the existing opinion that the bronzes are more resistant than brasses.

The cast iron and sheet steel control samples were readily attacked by the hot gas, the corrosion being much more extensive than in the case of any of the Cr-Ni alloys.

A general survey of the results presented seems to indicate that for the most part Cr-Ni steels of the 18-8 and 23-11 type are quite resistant to the corrosive action of hot sulphur dioxide gas as found in the pond type coolers. Undoubtedly, high Cr high Ni alloys are also quite resistant, although the toughness and cost of such alloys almost preclude their general use for sulphite work. The Cr-Ni alloys of the 18-8 type appear to be somewhat more resistant than bronze which is more or less the standard metal for digester fittings. There is no doubt that the Cr-Ni alloys in general are much more resistant than the various types of cast iron or soft steel.

Perhaps the greatest problem in the successful application of chrome-nickel steels for the fabrication of structural materials to be used for sulphite pulping, is the securing of a uniform product. Experiments seem to indicate that the same alloy from various manufacturers or from the same manufacturer has been found to vary in its resistance to the corrosive action of the materials handled. Various sulphite superintendents demand that the product be uniform in composition and in its method of fabrication, for upon such uniformity depends a long satisfactory service from a given product.

Pulp and Paper Industry Literature Review

Abstracts of Articles and Patents Compiled by the Abstracts and Bibliography Committee of the Technical Association of the Pulp and Paper Industry, A. Papineau-Couture, John F. Ohlson, C. E. Peterson and Clarence J. West, Chairman

Copies of United States Patents can be obtained from the United States Patent Office, Washington, D. C., for 10 cents each. Send currency, not stamps.

Digesters

The Elliptical Blowpit. H. W. French. Paper Trade J. 96, No. 2: 29-31 (Jan. 12, 1933).—A discussion of its advantages over other forms of blowpits.—A. P.-C.

Circulation System for Pulp Digesters. Einar Morterud. Brit. pat. 377,505 (Oct. 14, 1931).—The digester has a suction sieve near the middle and pressure sieves at the top and bottom, while an interior circulation pump is connected on its intake side with the suction sieve and on its outlet side with the top and bottom pressure sieves. By controlling the current of liquid to the latter and also the supply of steam to each current, a uniform digestion of pulp is obtained.—A. P.-C.

Apparatus for Digesting Wood Pulp. Einar Morterud. U. S. pat. 1,882,391 (Oct. 11, 1932).—In order to cook wood with the least possible quantity of liquor, the chips are exposed through the whole of the cooking process to a shower of liquor which is allowed to percolate through the chips, the liquor being afterwards collected in a tank below the digester, from which it is passed through a heater back to the showering device at the top of the digester. The tank in which the liquor collects after percolating through the chips may be separate from the digester or may be formed in the lower part thereof—A. P.-C.

Digester Safety Valves. Jakob Pfotzer, Wochbl. Papierfabr, 63, No. 47: 863 (Nov. 19, 1932)—Discussion of the operation of safety valves and recommendation for a valve designed by the author.—J. F. O.

Arrangement for the Filling of Cookers, Especially Pulp Digesters. Carl Huntemuller, Freiberg. Ger. pat. 553,516 (May 12, 1927).—A propeller, driven by an electric motor, is arranged in the throat of the digester.—J. F. O.

Process and Arrangement for the Manufacture of Pulp. Aktiebolaget A. Ekstroms Maskinaffar, Stockholm, Sweden. Aust. pat. 126,794 (July 15, 1931).—In the lower part of the digester, a circulation system is arranged into which a gas is introduced which aids in the decomposition of the wood.—J. F. O.

Digester Safety Valve Designed by Niethammer-Wolf. Wochbl. Papierfabr. 63, No. 40: 745-46 (Oct. 1, 1932).—A description of the valve and its operation are given.—J. F. O.

Concerning the Difficulties of Control of Digester Safety Valves. Jakob Pfotzer. Papier Fabr. 30, No. 48: 682 (Nov. 27, 1932).—Polemic over a previous article on the subject.—J. F. O.

Pulp Digester with Forced Liquor Circulation and Circulation Pumps with Reversible Rotation. E. Morterud, Torderoed. Nor. pat. 50,938 (Nov. 7, 1929).—J. F. O.

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Process and Arrangement for the Blowing of Pulp Digesters. Einar Morterud, Torderoed, Norway. Finn. pat. 14,336 (Sept. 4, 1928).—Before blowing, the liquor can be removed under its own pressure, or by steam or a pump put into another container.—J. F. O.

Supply Arrangement for Chipped Wood and Similar Materials. A. Bol. Arboga Mek. Verkstad, Arboga. Swed. pat. 74,898 (Dec. 20, 1928).—J. F. O.

Arrangement on Pulp Digesters Heated with Direct Steam. Einar Morterud. Czech. pat. 38,408. The cylindrical center part of the digester is provided with several openings for the steam which are protected by oblique screen plates.—J. F. O.

Arrangement for Filling Dome Shaped Pulp Digesters. Paul Pieper, Breslau. Ger. pat. 558,844 (Jan. 16, 1929).—J. F. O.

Transparent Autoclave for Use in Pulp Research. S Hilpert and H. Hofmeier. Chem. Fabrik 6, no. 1:5 (Jan. 4, 1933); Bull. Inst. Paper Chem. 3:150.—A glass autoclave for pressure work up to 12 atmospheres and 150 deg. C. is described and illustrated by a diagram.—C. J. W.

Miscellaneous

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Water Supply for the Paper Industry. L. M. Booth. Water Works and Sewerage 79: 160-162, 237-239 (1932).—Suspended matter should be removed by screening, sedimentation and coagulation with alum and if necessary sodium aluminate. For polluted waters preliminary clorination or chloramine treatment is effective. Adequate mixing of chemicals and water can be obtained by mechanical agitation or baffles. The settling-basins design has an important bearing upon the condition of the water. The water should have less than 10 p.p.m. of turbidity upon entering the filters. The quality of the water is directly responsible for the quality of the water.—A. P.-C.

Paper Making Research in Russia and Sweden. Louis E. Wise. Paper Industry 14:730-731 (Jan. 1933).—A brief review of some recent work by Russian and Swedish chemists and technologists.—A. P.-C.

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Technical Control in a Writing Paper Mill. Carl Schneider. Paper Industry 14: 668-669 (Dec., 1932).—A classification of control functions in mills with suggestive routine tests for standardizing manufacturing processes.—A. P.-C.

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The Durability of Paper. W. Sembritzki, Wochbl. Papierfabr. 63, No. 48: 877-78 (Nov. 26, 1932).—The author recommends the use of rag paper and Japanese hand made paper when durability is desired. The European viewpoint of durability of paper includes high physical tests while in America a chemically pure paper is regarded as the most important factor in durability—J. F. O.

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The Annual Report for the Corporations of the Paper Industry for the Year 1931 (Germany). A. E. Weber, Berlin. Wochbl Papierfabr. 63, No. 49: 892-93 (Dec. 3, 1932).—A resumé of the financial status of the industry at the end of the year 1931.—J. F. O.

Biological Questions in the Manufacture of Paper. B. Schulze, Berlin-Dahlem. Zellstoff Papier 12, No. 7: 284-288 (July, 1932); Papier-Fabr, 30, No. 31: 486-88; No. 32: 497-99 (July 13, Aug. 7, 1932).—With reference to current literatures on the subject, the author discusses the following topics, the destruction of the most important raw material, the wood, by bacterial action, protective measures, treatment and storage of the pulp wood on the mill property, influence of fungus destruction on pulp and ground wood manufacture, the influence of mold fungus on pulp and ground wood, co-work of the bacteria in the retting of the bast fiber, spots on the paper caused by iron and manganese basteria, iron in the mill water occurring through the growth of the thread bacteria in the pipe lines, the action of the waste water from pulp mills on animal life, destruction of felts by bacterial action, fungus spots on paper, and the use of paper, board and pulp for covering the soil.—J. F. O.

Arrangement for the Cutting Up and Forwarding of Waste Paper and Similar Materials. Jagenburg Werke A.G. Dusseldorf. Swed. pat. 74,766 (Aug. 16, 1928).—J. F. O.

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Analysis and Testing

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A Comparison of Four Methods for the Determination of Lignin. P. S. Billington, F. A. Simmonds and P. K. Baird. Paper Trade J. 96, No. 4: 30-33 (Jan. 26, 1933).—The modified U. S. Forest Products Laboratory method was found more suitable for routine anayltical control than the Ross-Potter and the Willstatter-Zechmeister (41.4% hydrochloric acid) methods.—A. P.-C.

A new tester for the Degree of Beating. Zellstoff Papier, 12, No. 12: 494-95 (Dec., 1932).—Description of a new tester to determine the degree of beating, so arranged that the density of the stock need not be taken into considration.—J. F. O.

Measuring Drainage Time with the British Sheet Machine. W. Boyd Campbell. Pulp Paper Can. 34: 95-97 (1933).—A study of some of the factors concerned with the use of the British sheet machine as a freeness or drainage tester. The formula $\phi t = R_1 \div RW$ is reduced, where ϕ is the fluidity of water, t the time of flow, W the

sheet weight, R_1 is a constant resistance of the instrument and R the resistance constant peculiar to the pulp. In arriving at this simple relationship certain assumptions were made, which are discussed.

The Quantitative Determination of Ash in Wood Pulp. Anon. Paper Trade J. 96, No. 9: 31 (March 2, 1933).—A description of the tentative official standard T.A.P.P.I. method.—A. P.-C.

Determination of the Bleachability of Pulp by Means of Permanganate. Emmanuel Wathelet and Léon Remacle. Mon. Papetrie Belge 13: 27-31 (Jan., 1933).—Work up 2 g. of air-dry pulp into a ball with 8 g. of water, place in 470 cc. of water in a 1-l. flask, stir thoroughly, add 22 cc. of approximately normal sulphuric acid and 50 cc. decinormal potassium permanganate, let stand exactly 1 hour with occasional stirring, add 50 cc. of decinormal ferrous ammonium sulphate, filter, to a 100-cc. aliquot add 900 cc. of water and 10 cc. of normal sulphuric acid, and titrate with decinormal ferrous ammonium sulphate. Calculate the per cent of potassium permanganate consumed on the weight of dry pulp. The results obtained agree with those found in practise for the bleachability of the pulp.—A. P.-C.

Rapid Method for Distinguishing Bleached Sulphate and Bleached Sulphite. Ralph W. Shaffer. Ind. Eng. Chem. (Analyt. Edit.) 5: 35-36 (Jan. 15, 1933).—The stain used consists of a (preferably freshly prepared) solution of 1 g. sodium carbonate and 1 g. of C.P. brazilin in 175 cc. of distilled water. The technic of the test is described.—A. P.-C.

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Report on a Proposed Standard Instrument for Classification of Paper Making Fibers According to Length. G. D. O. Jones, C. Alexander, T. W. Ross, and H. Wyatt Johnston. Pulp Paper Can. 34: 117-122 (1933).—An explanation of the principle underlying the Johnston screen classifier, with a review of the development of the method, a description of the construction and operation of the instrument, and presenting the experimental evidence on which the procedure is based. Results are also given of a study of representative groundwood pulps.—A. P.-C.

Paper Stretch Tester. Herman Koester assignor to The Bristol Co. U. S. pat. 1,885,209 (Nov. 1, 1932).—A series of paper strips of uniform length and width are rigidly secured at one end within a closed chamber through which suitably conditioned air is circulated. The free end of each strip is placed under uniform tension, which is the same for all strips, and each strip is connected to a suitable indicating member whereby any change in length due to stretching of the paper will be registered in such a way that comparison may be made among the various samples under test.—A. P.-C.

Method of Measuring Paper Characteristics on the Paper Machine. Louis P. Schweitzer and Samuel M. Bagno assignors to Peter J. Schweitzer, Inc. U. S. pat. 1,898,066 (Feb. 21, 1933).—A beam of radiant energy is projected from a source on one side of the sheet on to a thermocouple on the other side of the sheet; and a second beam from the same source is projected on a second thermocouple on the same side of the sheet as the source. The currents induced in the thermocouples are made to act differentially on a current-measuring instrument, so that the reading will indicate the effect on the first-mentioned beam of its passage through the sheet, irrespective of variations in the source itself.—A. P.-C.

Initial Tear Testing Apparatus. Charles B. Thwing, assignor to Thwing Instrument Co. U. S. pat. 1,884,388 (Oct. 25, 1932).—The instrument is designed to give an accurate indication of the torsional strain applied to paper or cardboard at the moment of initial tear. The construction is such that the graduations of the scale are spaced so as to provide larger spaces at those portions at which initial tear ordinarily occurs, and the indication of the pointer on the scale is maintained after recession of the drive shaft during the tearing operation.—A. P.-C.

Analysis of Cigarette Papers. Anon. Papeterie 55: 10-14, 122-126 (Jan. 10, Feb. 10, 1933).—A description of the methods used at the Italian Paper Experimental Station, Milan.—A. P.-C.

The Value of a Paper Stiffness Test. F. W. Adams and John Bellows. Paper Trade J. 96, No. 9: 37-40 (March 2, 1933).—A brief description of the principle, construction and operation of the Witham-Bellows stiffness tester (based on Witham's U. S. pat. 1,385,164; Can. pat. 214,457), with a discussion of its merits and a few examples of the applications of this stiffness test.—A. P.-C.

The Bekk Smoothness Tester As An Aid in Studying the Printing Quality of Paper. B. L. Wemhoff, R. H. Simmons and D. H. Boyce. Paper Trade J. 96, No. 4: 36-40 (Jan. 26, 1933).—The tester gives a numerical measure of smoothness of paper surfaces, reproducible within the limits of experimental error. Smoothness tests are of value in testing printing quality, and smoothness limits or smoothness range can be determined for certain classes of printing papers.—A. P.-C.

Pulp Purification

Conditioning Cellulose Fiber For Nitration. Milton G. Schur and Benjamin G. Hoos assignors to Brown Co. U. S. pat. 1,880,052 (Sept. 27, 1932).—A product adapted for nitration consists of finely shredded wood pulp having an alpha-cellulose content of at least about 94 per cent and having the physical condition resulting from shredding the pulp while wet.—A. P.-C.

Processing Cellulose Fiber. George A. Richter assignor to Brown Co. U. S. pat. 1,880,046 (Sept. 27, 1932).—Material such as unrefined sulphite pulp is digested at temperatures above 150 deg. C. in substantially neutral aqueous liquor containing a buffer against generation of acids.—A. P.-C.

Pulp Purifying Process. George A. Richter assignor to Brown Co. U. S. pat. 1,880,047 (Sept. 27, 1932).—A suspension of pre-liberated wood pulp is digested in ammoniated water until the pulp acquires a high alpha-cellulose content.—A. P.-C.

White Wood Pulp for High Grade Paper Manufacture. George A. Richter assignor to Brown Co. U. S. pat. 1,880,409 (Sept. 27, 1932).—Unbleached, alkaline-cooked wood pulp is treated with an oxidizing agent such as chlorine or hypochlorite to react with ligneous groups in the pulp, the pulp is digested at a temperature of about 40 deg. to 70 deg. C. in an alkaline liquor containing about 2 to 4 per cent alkali (calculated as caustic soda equivalent) to remove largely ligneous reaction products while substantially preserving unchanged the alpha-cellulose content of the pulp, and the digested pulp is bleached to whiteness while substantially preserving its physical characteristic (suitably by an alkaline hypochlorite liquor).—A. P.-C.

IMPORTS OF PAPER AND PAPER STOCK

NEW YORK, BOSTON, PHILADELPHIA AND OTHER PORTS

NEW YORK IMPORTS

WEEK ENDING OCTOBER 28, 1933

CIGARETTE PAPER

De Manduit Paper Corp., Pres. Harding, Havre, 135 cs.

WALL PAPER

Whiting & Patterson Co., Port Dunedin, London, 2 cs.; Reitman Pilcer Co., Drottningholm, Gothenburg, 4 bls.; ——, Pres. Harding, Havre, 8 cs.

PAPER HANGINGS

W. H. S. Lloyd & Co., Port Dunedin, London, 3 bls.

NEWS PRINT

Lunham & Reeve, Scanpenn, Kotka, 195 rolls; Jay Madden Corp., Scanpenn, Kotka, 422 rolls; Gilman Paper Co., Hallaren, Norrkoeping, 622 rolls; Brooklyn Times, Hallaren, Norrkoeping, 484 rolls; ——, Stavangerfjord, Oslo, 878 rolls; Perkins Goodwin & Co., Pres. Harding, Hamburg, 449 rolls; News Syndicate, Belvoir, Thorold, 2782 rolls.

PRINTING PAPER

Steffens Jones Co., Black Tern Antwerp, 15 cs.; S. H. Pomerance, Port Dunedin, London, 2 cs.; Winsor Newton, Inc., Port Dunedin, London, 2 cs.; Senefelder Co., New York, Hamburg, 9 cs.; Ozalid Corp., New York, Hamburg, 49 cs.

WRAPPING PAPER

F. C. Strype, Black Tern, Antwerp, 12 cs.; ——, Port Dunedin, London, 2 cs.

FILTER MATERIAL

Gerhard & Hey, Bremen, Bremen, 8 cs.

FILTER PAPER

H. Reeve Angel & Co., Inc., Majestic, Southampton, 20 bls., 7 cs.

DRAWING PAPER

——, Scanpenn, Stettin, 28 cs.

METAL COATED PAPER

Globe Shipping Co., New York, Hamburg, 48 cs.; K. Pauli Co., New York, Hamburg, 45 cs.

SURFACED COATED PAPER

Globe Shipping Co., New York, Hamburg, 3 cs.

COATED PAPER

Chas. Happel, New York, Hamburg, 17cs.; Chas. Happel, Pr. Harding, Hamburg, 4 cs.

PHOTO PAPER

Medo Photo Supply Co., Majestic, Southampton, 1 cs.

DECALCOMANIAS

Sellers Transportation Co., Bremen, Bremen, 30 cs.; Sellers Transportation Co., New York, Hamburg, 3 cs.; Sellers Transportation Co., Europa, Bremen, 11 cs.

DECALCOMANIA PAPER

B. F. Drakenfeld & Co., Laconia, Liverpool, 6 cs. (Simplex).

TRANSFER PAPER

Rohner Gehrig & Co., Europa, Bremen, 2 cs.

TISSUE PAPER

Jay Madden Corp., Scanpenn, Helsingfors, 18 bbls.; B. F. Drakenfeld & Co., Laconia, Liverpool, 2 cs.; W. J. Byrnes, Aquitania, Southampton, 2 cs.; American Express Co., New York, Hamburg, 17 cs.

ENVELOPES

Beckhard Simfred Co., New York, Hamburg, 2 cs.; Globe Shipping Co., New York, Hamburg, 3 cs.

CARDBOARD

——, New York, Hamburg, 32 bls.

PASTE BOARD

——, New York, Hamburg, 60 cs.

MISCELLANEOUS PAPER

——, Bremen, Bremen, 6 cs.; The Borregaard Co., Inc., Drottningholm, Gothenburg, 71 rolls; Kraemer & Co., Drottningholm, Gothenburg, 121 bls.; Blauvelt Wiley Paper Co., Drottningholm, Gothenburg, 21 rolls, 7 bls.; ——, Drottningholm, Gothenburg, 24 rolls, 5 bls.; Cohoes Envelope Co., Drottningholm, Gothenburg, 69 rolls; E. H. Sargent & Co., Drottningholm, Gothenburg, 3 cs.; Keuffel & Esser Co., Pr. Harding, Hamburg, 50 cs.; Schenker & Co., Pr. Harding, Hamburg, 5 cs.; F. C. Strype, Pr. Harding, Hamburg, 5 cs.; ——, Europa, Bremen, 8 cs.

RAGS, BAGGINGS, ETC.

E. J. Keller Co., Inc., Black Tern, ——, 145 bls. bagging; Irving Trust Co., Scanpenn, Stettin, 77 bls. rags; G. W. Millar & Co., Inc., Winona, Dublin, 58 bls. paper stock; M. Snedeker Corp., Winona, Belfast, 279 bls. paper stock; Bank of N. Y. Trust Co., Winona, Belfast, 101 bls., paper stock; Corn Exchange Bank & Trust Co., Lehigh, Manchester, 87 bls. rags; E. Butterworth & Co., Inc., Lehigh, Manchester, 58 bls. rags; E. J. Keller Co., Inc., Lehigh, ——, 64 bls. bagging; ——, Port Dunedin, London, 72 bls.

rags; ——, Laconia, Liverpool, 34 bls. rags; O'Brien Padawer, Inc., Motomar, Barcelona, 175 bls. rags; S. Birkenstein & Son, Motomar, Barcelona, 76 bls. rags; J. Cohen Son Co., Pr. Harding, Hamburg, 25 bls. rags.

GLUE STOCK, ETC.

Hamel & Bennet, Black Tern, Antwerp, 65 bls. glue stock; ——, New York, Hamburg, 225 bags, bone glue.

OLD ROPE

——, Port Dunedin, London, 120 bls.; ——, Port Dunedin, 118 coils; N. E. Berzen, Motomar, Barcelona, 89 coils; Brown Bros., Harriman & Co., Motomar, Huelva, 24 coils; Chase National Bank, Montreal City, Bristol, 97 coils.

CHINA CLAY

J. Dixon Crucible Co., Pr. Harding, Hamburg, 500 bags, 25,710 kilos.

CASEIN

D. C. Andrews & Co., New York, Hamburg, 70 bags.

WOOD PULP

Lagerloef Trading Co., Scanpenn, Helsingfors, 39 bls. sulphite, 6 tons; Castle & Overton, Inc., Scanstates, Wiborg, 1754 bls. wood pulp, 351 tons; Lagerloef Trading Co., Scanstates, Wiborg, 1524 bls. sulphite, 281 tons; E. J. Keller Co., Inc., Scanpenn, ——, 343 bls. wood pulp, 52 tons; Stora Kopparberg Corp., Hallaren, Skutskar, 500 bls. wood pulp; Bulkley Dunton & Co., Hallaren, ——, 500 bls. wood pulp; E. M. Sergeant & Co., Stavangerfjord, Oslo, 300 bls., chemical; J. Andersen & Co., Stavangerfjord, Oslo, 1292 bls. sulphite; J. Andersen & Co., Drottingholm, Gothenburg, 250 bls. sulphite; Johaneson Wales & Sparre, Inc., Drottningholm, Gothenburg, 383 bls. sulphite; M. Sone, Drottningholm, Gothenburg, 406 bls. woodpulp; Atterbury Bros., Inc., Drottningholm, Gothenburg, 400 bls. sulphite; Chase National Bank, Drottningholm, Gothenburg, 200 bls. sulphite; E. M. Sergeant & Co., Drottningholm, Gothenburg, 911 bls. kraft soda; —, C. F. Liljevalch, Hernonsand, 1920 bls. sulphite, —, C. F. Liljevalch, Hernonsand, 3300 bls. sulphite; Bulkley Dunton & Co., C. F. Liljevalch, ——, 1375 bls. wood pulp; Perkins Goodwin & Co., C. F. Liljevalch, Sundsvall, 1200 bls. sulphite; Castle & Overton, Inc., New York, Hamburg, 1565 bls. wood pulp, 253 tons; Chemical Bank & Trust Co., New York, Hamburg, 600 bls. wood pulp, 92 tons; M. Sone, Pr. Harding, Hamburg, 163 bls. wood pulp, 25 tons; 1st Nat'l Bank of Boston, Pr. Harding, Hamburg, 336 bls. wood pulp, 50 tons; ——, Ida, Trieste, 302 bls. wood pulp.

WOOD PULP BOARDS

Lagerloef Trading Co., Scanpenn, Kotka, 128 rolls, 35 tons.

ALBANY IMPORTS

WEEK ENDING OCTOBER 28, 1933

Amtorg Trading Co., Hoegh Trader, Archangel, 3425 cords pulp wood; Perkins Goodwin & Co., C. F. Liljevalch, Sundsvall, 1500 bls. sulphite; ——, C. F. Liljevalch, Hernosand, 750 bls. sulphite; ——, C. F. Liljevalch, Hernosand, 9000 bls. sulphate.

PORTLAND IMPORTS

WEEK ENDING OCTOBER 28, 1933

——, C. F. Liljevalch, Hernosand, 2460 bls. sulphite; Tradesmans Natl. Bank, C. F. Liljevalch, Norrsundet, 1500 bls. sulphate.

BOSTON IMPORTS

WEEK ENDING OCTOBER 28, 1933

G. F. Malcolm, Inc., Laconia, Liverpool, 18 cs. tissue paper; National Shawmut Bank, Laconia, Liverpool, 40 bls. rags; Davies Turner & Co., Laconia, Liverpool, 1 cs. paper.

BALTIMORE IMPORTS

WEEK ENDING OCTOBER 28, 1933

Congoleum Nairn Co., Black Tern, Antwerp, 86 bls. rags; M. Sone, Bockenheim, Sundsvall, 210 bls. wood pulp.

NORFOLK IMPORTS

WEEK ENDING OCTOBER 28, 1933

Irving Trust Co., Lehigh, Manchester, 88 bls. bagging.

PHILADELPHIA IMPORTS

WEEK ENDING OCTOBER 28, 1933

Parsons & Whittemore, Inc., Scanpenn, Stockholm, 35 rolls newsprint; Castle & Overton, Inc., Scanpenn, Wiborg, 1957 bls. wood pulp, 391 tons; Lagerloef Trading Co., Scanpenn, Wiborg, 8553 bls. sulphite, 1648 tons; Paper Manfg. Co., Scanpenn, Kotka, 62 rolls news print; J. W. Hampton, Jr., Scanpenn, Kotka, 216 rolls, news print; Lagerloef Trading Co., Scanpenn, Kotka, 341 rolls woodpulp boards; Lagerloef Trading Co., Scanpenn, Kotka, 332 bls. wood pulp boards; Lagerloef Trading Co., Scanpenn, Kotka, 625 bls. sulphite, 125 tons; E. J. Keller Co., Inc., Scanpenn, ——, 344 bls. wood pulp, 53 tons; National City Bank, Scanpenn, Stettin, 7 bls. rags; Lang Co., Scanpenn, Stettin, 96 bls. rags; J. Anderson & Co., Scanpenn, Stettin, 390 bls. wood pulp, 77 tons; Castle & Overton, Inc., Winona County, Glasgow, 77 bls. waste paper; ——, Winona County, Glasgow, 709 bls. waste paper; ——, Winona County, Dublin, 142 bls. paper stock; ——, Ida, Trieste, 67 bls. rags.

TRENTON IMPORTS

WEEK ENDING OCTOBER 28, 1933

Paper Makers Imptg. Co., Montreal City, Fowey, 971 tons, 5 cwt. china clay; J. W. Hampton, Jr., Montreal City, Fowey, 50 tons, 3 cwt. china clay; J. W. Higman Co., Montreal City, Fowey, 313 tons, 3 cwt. china clay.

PHILADELPHIA MARKET QUIET

(Continued from page 24)

cotton as applied to the cordage industry. The newly appointed Committee on By-Laws presented the revised By-Laws as compiled by it, in which most all the recommendations suggested were included. It was decided to submit them to every member at their next meeting in November for thorough study, at which time they will be passed on. A nominating committee for election of new officers in December will also be appointed at the November meeting.

Geo. N. Ernest With Thos. W. Price Co.

The outstanding development of the week was contained in the announcement that the Thos. W. Price Company has appointed to the newly formally created position of general manager, George N. Ernest. Mr. Ernest came with the Price Company several months ago and he is widely known, particularly in the New York field because of services there as manager of the New York office of the Jessup & Moore Company.

New York Market Review

Office of the PAPER TRADE JOURNAL,
Wednesday, November 1, 1933.

Conditions in the local paper market are practically unchanged. Demand for the various standard grades of paper is listless, due in part to the delay in ratifying the Recovery Code for the paper industry. Salesmen of the leading paper organizations are generally optimistic over the future outlook.

The news print paper market is showing signs of improvement. Advertising volume in the leading newspapers is increasing and consumption is expanding. Manufacturing operations in the United States, Canada and Newfoundland are being maintained in sufficient volume to take care of current requirements.

Trading in the paper board market is fairly active. Demand for box board is along seasonal lines. Prices are steady. Although the fine paper market is dull, quotations are well sustained. Tissues are moving in good volume. The coarse paper market is listless. Kraft wrapping paper prices are well sustained.

Mechanical Pulp

The ground wood pulp market is exhibiting a sound undertone. Production in this country and abroad is proceeding regularly and is practically keyed to consumption, with the result that accumulations are not excessive. Prices are generally holding to previously reported levels and reports of shading are infrequent.

Chemical Pulp

Some improvement is noticed in the chemical pulp market. Quotations on both foreign and domestic grades are firmer. Imported bleached sulphite is now selling at from $2.75 to $3.00, on dock, Atlantic ports. Domestic easy bleaching sulphite is offered at from $2.05 to $2.15, f. o. b. pulp mill.

Old Rope and Bagging

The old rope market continues quiet. While offerings of domestic and foreign old manila rope are limited, the prevailing demand is light. Small mixed rope is fairly active. Old rope prices are unchanged. The bagging market is irregular. Gunny is slightly firmer. Scrap bagging is spotty.

Rags

Paper mill interest in the domestic rag market is lacking at present. Demand for new rags has fallen off and prices on several of the grades are easier. No. 1 new white shirt cuttings, however, are holding up well. Roofing grades are rather soft. The imported rag market is marking time.

Waste Paper

The paper stock market developed further weaknesses. Prices on all the lower grades of waste paper are easier, although collections are reported to have fallen off. The higher grades of paper stock are also softer, including hard and soft white shavings. Quotations on book stock have declined sharply.

Twine

Demand for the various grades of twine from the consumers is only moderately active at present. Trading should become more lively, however, with the approach of the Christmas holidays. Despite the usual keen competition for extra desirable orders, prices are generally holding to schedule.

Announcement to I. P. Newsprint Customers

International Paper Company has sent the following communication to its newsprint customers:

At the invitation of General Johnson the newsprint industry, including representatives of Canadian and European producers met in Washington last Tuesday. Pending further conferences, the meeting endorsed the recommendations of the NRA Industrial Adviser for the newsprint industry for stabilizing the market at the present base price of $41 per ton with zone differentials. We believe this action is constructive, beneficial to the publishing industry and necessary to avoid utter chaos in the newsprint industry. Any further price cutting could only be temporary, would force the shutting down of additional mills both here and abroad and would lead to further reductions in the already unprofitable prices in other large branches of the United States paper industry.

The recommendation of the NRA Industrial Adviser for the newsprint industry includes a provision for possible adjustments in prices next year. As misleading reports on this point may have disturbed our customers, we have to-day reviewed the subject fully with Mr. McMillen, the Industrial Adviser for the newsprint industry, and we unhesitatingly assure our customers that no arbitrary increases are contemplated or possible.

On the contrary, and as is clear from a reading of Mr. McMillen's report as a whole, merely common sense provision is made to permit the proper adjustment of prices by an amount which will not be greater than is warranted by changes in conditions, including manufacturing costs, inflation or revaluation of the dollar, and all factors and conditions in the publishing industry.

This company is trying to do its part in the Recovery program and we recognize thoroughly that premature or unwarranted price increases are unwise.

This is submitted in accordance with our usual custom of keeping our customers posted on matters of common interest.

The formal price announcement required under our contract with you will be sent to you at an early date.

Paper Mills Adopt Five-Day Week

[FROM OUR REGULAR CORRESPONDENT]

TURNER'S FALLS, Mass., October 30, 1933.—The mills of the Esleeck Manufacturing Company and the Keith Paper Company are operating on an eight-hour day and a five-day week.

Miscellaneous Markets

Office of the PAPER TRADE JOURNAL,
Wednesday, November 1, 1933.

BLANC FIXE.—The position of the blanc fixe market is practically unchanged. Prices are holding to schedule. The pulp is quoted at from $42.50 to $45.00 per ton, in bulk; while the powder is selling at from 3½ to 3¾ cents per pound, in barrels, at works.

BLEACHING POWDER.—Steadiness prevails in the bleaching powder market. The contract movement is well up to average. Prices are generally holding to formerly quoted levels. Bleaching powder is quoted at from $1.75 to $2.00 per 100 pounds, in drums, at works.

CASEIN.—The casein market is easier. Domestic standard ground is quoted at 12½ cents and finely ground at 13½ cents per pound. Argentine standard ground is selling at 14 cents and finely ground at 14½ cents per pound, all in bags, car lot quantities.

CAUSTIC SODA.—Conditions in the caustic soda market are satisfactory. Prices remain steady and unchanged. Solid caustic soda is quoted at from $2.55 to $3.00; while the flake and ground are selling at from $2.95 to $3.00 per 100 pounds, in large drums, at works.

CHINA CLAY.—The china clay market is fairly active. Contract shipments are going forward freely. Imported china clay is quoted at from $12 to $17 per ton, ship side; while domestic paper making clay is selling at from $4.50 to $12.00, per ton, at mine.

CHLORINE.—Demand for chlorine is fairly persistent. The contract movement is normal. Prices continue firm and shading is infrequent. Chlorine is quoted at $1.75 per 100 pounds, in tanks, or multi-unit cars, in ton lots, or over, at works.

ROSIN.—The rosin market is firmer. The grades of gum rosin used in the paper mills are now quoted at from $5.05 to $5.10 per 280 pounds, in barrels, at works; while wood rosin is selling at $4.00 per 280 pounds, in barrels, at southern shipping points.

SALT CAKE.—Paper mill demand for salt cake is moderately active. Prices are firm. Salt cake is quoted at from $14 to $14.50; chrome salt cake at from $13.50 to $14 per ton, at works; while imported salt cake is selling at from $14 to $14.50 per ton, on dock.

SODA ASH.—The soda ash market is exhibiting a strong undertone. Shipments against contract are moving regularly. Prices are firm. Quotations on soda ash, in car lots, at works, per 100 pounds, are as follows: in bulk, $1.05; in bags, $1.30; and in barrels, $1.43.

STARCH.—The starch market is showing signs of improvement. Demand from the paper mills is seasonal. Prices remain steady. Special paper making starch is quoted at $2.67 per 100 pounds, in bags; and at $2.95 per 100 pounds, in barrels, at works.

SULPHATE OF ALUMINA.—Trading in the sulphate of alumina market is fairly brisk. Prices are holding to schedule. Commercial grades are quoted at from $1.25 to $1.46; while iron free is selling at from $1.90 to $2.05 per 100 pounds, in barrels, at works.

SULPHUR.—The sulphur market continues steady. Sulphur is quoted at $18 per long ton, on orders of 1,000 tons, or over, on yearly contracts; and at $20 per ton on any smaller quantity over that period. On spot and near by car loads, the quotation is $21 per ton.

TALC.—Business in the talc market is normal for the time of year. Prices are steady to firm. Domestic talc is still quoted at from $16 to $18 per ton, in bulk, at eastern mines; while imported talc is selling at from $23 to $30 per ton, on dock.

Market Quotations

Paper

(F. o. b. Mill)

Ledgers	6.50	@	—
Bonds	6.00	@	—
Index	6.00	@	—
Writings—			
Extra Superfine	6.50	@	—
Superfine	6.25	@	—
Tub sized	5.75	@	—
Engine sized	5.50	@	—
Book, Cased—			
S. & S. C.	5.50	@	—
S. & S. C. Litho.	5.75	@	—
M. F.	5.25	@	—
Coated and Enamel	6.15	@	9.30
Coated Litho	6.90	@	—
Tissues—Per Ream—			
White No. 1	.60	@	.80
White No. 2	.55	@	.70
Anti-Tarnish M. G. only	.75	@	.80
Colored	.80	@	1.00
Kraft	.75	@	.80
Manila	.65	@	.70
Manila—			
No. 1 Jute	9.00	@	9.25
No. 2 Jute	7.75	@	8.50
No. 1 Wood	4.00	@	5.25
No. 2 Wood	3.50	@	4.00
Butchers	3.37½	@	—
Fibre Papers—			
No. 1 Fibre	4.25	@	5.50
No. 2 Fibre	4.00	@	4.75
Common Bogus	1.50	@	3.00
Screenings	2.00	@	3.00
Card Middles	4.00	@	5.00
Glassine—			
Bleached, basis 25 lbs., No. 1	.11	@	—
No. 2	.10	@	—
Bleached, basis 20 lbs.	.13	@	—

(Delivered New York)

News, per ton—			
Roll, contract	40.00	@	—
Rolls, spot	40.00	@	—
Sheets	45.00	@	—
Side Runs	25.00	@	—
Kraft—			
No. 1 Domestic	4.75	@	5.00
No. 2 Domestic	3.87½	@	—
Southern	3.87½	@	—
Imported	Nominal		
Boards—per ton—			
News	45.00	@	50.00
Chip	42.50	@	47.50
Binders Boards	68.00	@	72.00
Kraft Liner	75.00	@	85.00
Standard 85 Test Jute Liner	50.00	@	55.00
Sgl. Mla. Ll. Chip	52.50	@	55.00

Mechanical Pulp

(On Dock, Atlantic Ports)

No. 1 Imported—			
Moist	27.50	@	29.00
Dry	28.00	@	29.50

(F.o.b. Mill)

No. 1 Domestic and Canadian	24.00	@	28.00

Chemical Pulp

(On Dock, Atlantic Ports)

Sulphite (Imported)—			
Bleached	2.75	@	3.00
Easy Bleaching	2.10	@	2.20
No. 1 strong unbleached	1.95	@	2.05
Mitscherlich Unbleached	2.00	@	2.10
No. 2 Strong unbleached	1.85	@	1.95
No. 1 Kraft	1.75	@	1.85
No. 2 Kraft	1.60	@	1.70
Sulphate—			
Bleached	2.75	@	3.25

(F. o. b. Pulp Mill)

Sulphite (Domestic and Canadian)—			
Bleached	2.50	@	3.75
Easy Bleaching	2.05	@	2.15
News	1.90	@	2.00
Mitscherlich unbleached	2.25	@	2.50
Kraft (Domestic)	1.60	@	2.75
Soda Bleached	2.50	@	—

Domestic Rags

New Rags

(Prices to Mill f. o. b. N. Y.)

Shirt Cuttings—			
New White, No. 1	6.50	@	7.00
Silesias No. 1	4.25	@	4.50
New Unbleached	6.75	@	7.25
New Soft Blacks	3.00	@	3.25
Blue Overall	4.00	@	4.25
Fancy	2.50	@	2.75
Washables	1.75	@	2.00
Mixed Khaki Cuttings	3.00	@	3.25
O. D. Khaki Cuttings	3.75	@	4.00
Men's Corduroy	1.50	@	1.75
New Mixed Blacks	2.50	@	2.75

Old Rags

White, No. 1—			
Repacked	3.75	@	4.00
Miscellaneous	3.00	@	3.50
White, No. 2—			
Repacked	2.00	@	2.50
Miscellaneous	1.75	@	2.00
Thirds and Blues—			
Repacked	1.75	@	2.00
Miscellaneous	1.50	@	1.75
Black Stockings	2.50	@	3.00
Roofing Rags—			
No. 1	.65	@	.70
No. 2	.50	@	.60
No. 3	.40	@	.50
No. 4	.35	@	.40
No. 5A	.30	@	.35

Foreign Rags

New Rags

New Dark Cuttings	1.50	@	1.60
New Mixed Cuttings	1.60	@	1.70
New Light Silesias	3.50	@	3.75
Light Flannelettes	3.25	@	3.50
Unbleached Cuttings	5.75	@	6.00
New White Cuttings	5.50	@	6.00
New Light Oxfords	3.25	@	3.50
New Light Prints	2.75	@	3.00

Old Rags

No. 1 White Linens	7.00	@	7.50
No. 2 White Linens	6.00	@	6.50
No. 3 White Linens	4.50	@	5.00
No. 4 White Linens	2.25	@	2.50
No. 1 White Cotton	3.75	@	4.00
No. 2 White Cotton	3.00	@	3.25
No. 3 White Cotton	2.50	@	2.75
No. 4 White Cotton	1.50	@	1.60
Extra Light Prints	2.00	@	2.25
Ord. Light Prints	1.75	@	1.85
Med. Light Prints	1.55	@	1.65
Dutch Blue Cottons	1.65	@	1.80
French Blue Linens	2.10	@	2.25
German Blue Linens	1.85	@	2.00
German Blue Cottons	1.35	@	1.50
Checks and Blues	1.30	@	1.40
Lindsay Garments	1.10	@	1.15
Dark Cottons	1.00	@	1.10
Old Shopperies	.85	@	.90
New Shopperies	.80	@	.85
French Blues	1.50	@	1.65

Old Rope and Bagging

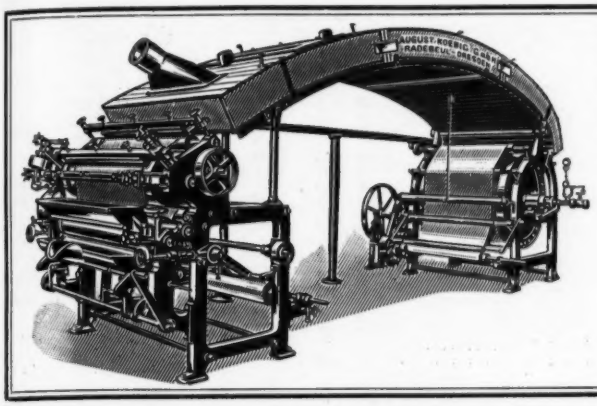
(Prices to Mill f. o. b. N. Y.)

Gunny No. 1—			
Foreign	1.30	@	1.40
Domestic	1.25	@	1.35
Wool Tares, light	1.05	@	1.15
Wool Tares, heavy	1.05	@	1.15
Bright Bagging	1.00	@	1.10
Manila Rope—			
Foreign	2.50	@	2.75
Domestic	2.50	@	2.75
Small Mixed Rope	1.10	@	1.35
New Burlap Cut	1.50	@	1.75
Hessian Jute Threads—			
Foreign	2.60	@	2.75
Domestic	2.80	@	3.00

Old Waste Papers

(F. o. b. New York)

Shavings—			
White Envelope Cuttings	2.50	@	2.70
Ordinary Hard White No. 1	2.25	@	2.35
Hard White No. 2	2.10	@	2.20
Soft White No. 1	2.05	@	2.15
Flat Stock—			
Stitchless	1.00	@	1.05
Overissue Mag	1.00	@	1.05
Solid Flat Book	.90	@	.95
Crumpled No. 1	.75	@	.80
Solid Book Ledger	1.60	@	1.85
Ledger Stock	1.00	@	1.10
New B. B. Chips	.35	@	.45
Manilas—			
New Env. Cut	1.50	@	1.60
New Cuttings	1.10	@	1.20
Extra No. 1 old	.80	@	.90
Print	Nominal		
Bogus Wrapper	.50	@	.60
Container	Nominal		
Old Kraft Machine—			
Compressed bales	1.10	@	1.20
News—			
No. 1 White News	1.10	@	1.20
Strictly Overissue	.65	@	.70
Strictly Folded	.45	@	.55
No. 1 Mixed Paper	.30	@	.35



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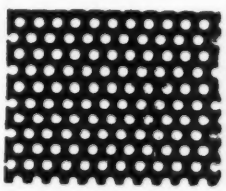

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5775

Twines
(F. o. b. Mill)

Cotton—			
B. C. 18 basis	.30	@	.32
No. 1	.20	@	.22
No. 2	.19	@	.20
No. 3	.17	@	.18
A. Italian, 18 basis	.36	@	.37
Finisned Jute—			
Dark, 18 basis	.18	@	.20
Light, 18 basis	.20	@	.22
Jute Wrapping, 3-6 Ply—			
No. 1	.15½	@	.16½
No. 2	.15	@	.16
Tube Rope—			
4-ply and larger	.09¾	@	.11¾
Fine Tube Rope—			
4-ply	.13¼	@	.14¾
3-ply	.14¼	@	.14¾
2-ply	.15¼	@	.15¾
Paper Makers Twine	.08¾	@	.10¾
Box Twine, 2-3 ply	.12¼	@	.13½
White Hemp	.12¼	@	.15¾
Java Sisal—			
No. 1 Basis	.11½	@	—
No. 2 Basis	.10½	@	—
New Zealand Sisal	.11½	@	—
Sisal Lath Yarn—			
No. 1	.13½	@	.15½
No. 2	.11½	@	.13½
Manila Twine	.24½	@	.29½

CHICAGO

Paper
(F. o. b. Mill)

Rag Bond	.30	@	.53¼
Water Marked Sulphite Bond	.09	@	.12
Sulphite Bond	.09	@	.11
Superfine Writing	.18	@	.24
No. 1 Fine Writing	.14	@	.18
No. 2 Fine Writing	.12	@	.14
No. 3 Fine Writing	.07	@	.18
No. 1 M. F. Book	.06½	@	.07¾
No. 2 M. F. Book	.05¾	@	.06¾
No. 1 S.&S.C. Book	.06¾	@	.07¾
No. 2 S.&S.C. Book	.05¾	@	.06½
Coated Book	.07½	@	.12
Coated Label	.07½	@	.10
No. 1 Manila	.04¾	@	.05¾
No. 1 Fibre	.04¾	@	.05¾
No. 2 Manila	.04¼	@	.04¾
Butcher's Manila	.03¼	@	.03¾
No. 1 Kraft	3.50	@	4.50
Southern Kraft	2.62½	@	—
No. 2 Kraft	2.62½	@	—
Wood Tag Boards	.04¼	@	.06¾
Sulphite Screenings	.03	@	.03¾
Manila Tissue	.07	@	.07¾
White Tissue	.07¼	@	.07½

(Delivered Central Territory)

News, per ton—			
Rolls, contract	45.00	@	—
Sheets	50.00	@	—
Boards, per ton—			
Plain Chip	37.50	@	—
Solid News	43.50	@	—
Manila Lined Chip	47.50	@	—
Patent coated	55.00	@	—
Container Lined—			
85 Test	60.00	@	65.00
100 Test	60.00	@	70.00

Old Papers
(F. o. b. Chicago)

Shavings—			
No. 1 White Envelope cuttings	1.70	@	1.80
No. 1 Hard White	1.40	@	1.50
No. 1 Soft White	1.20	@	1.30
Ledger & Writings	.80	@	.90
Solid Books	.80	@	.90
Blanks	1.00	@	1.05
Krafts	.90	@	1.00
New Kraft Cuts	1.20	@	1.30
Manila Env. Cuts	1.25	@	1.30
Ex. No. 1 Manila	1.00	@	1.05
Print Manila	.60	@	.65
Overissue News	.60	@	.70
Old Newspapers—			
No. 1	.55	@	.65
Mixed Papers—			
No. 1	.50	@	.55
Roofing Stocks—			
No. 1	30.00	@	—
No. 2	28.00	@	—

PHILADELPHIA

Paper
(F. o. b. Mill)

Bonds	.04	@	.40
Ledgers	.06	@	.40
Writings—			
Superfine	.10	@	.18
Extra Fine	.15	@	.36
Fine	.15	@	.26
Fine, No. 2	.10	@	.25
Fine No. 3	.05½	@	.18
Book, M. F.	.04¼	@	.07
Book, S. S. & C.	.05	@	.07¼
Book, Coated	.06	@	.16
Coated Lithograph	.06	@	.11
Label	.07	@	.11
No. 1 Jute Manila	.06	@	.10
Manila Sul., No. 1	.03	@	.06
Manila No. 2	.03	@	.05
No. 1 Kraft	.05¼	@	.06½
No. 2 Kraft	.03¾	@	.05
Southern Kraft	2.75	@	4.00
Common Bogus	.03	@	.04½

(Delivered Philadelphia)

News Print Rolls	46.00	@	53.00
Straw Board	40.00	@	45.00
News Board	37.00	@	45.00
Chip Board	40.00	@	45.00
Wood Pulp Board	70.00	@	85.00
Binder Boards—			
No. 1, per ton	75.00	@	80.00
No. 2, per ton	70.00	@	75.00
Carload lots	65.00	@	70.00
Tarred Felts—			
Regular	52.25	@	54.25
Slaters (per roll)	.84	@	.94
Best Tarred, 1-ply (per roll)	1.95	@	2.10
Best Tarred, 2-ply (per roll)	1.50	@	1.60
Best Tarred, 3-ply	2.00	@	2.25

Domestic Rags (New)
(Price to Mill, f. o. b. Phila.)

Shirt Cuttings—			
New White, No. 1	.03¼	@	.04
New White, No. 2	.02½	@	.04
Light Silesias	.02¾	@	.03
Silesias, No. 1	.03	@	.03½
Black Silesias, soft	.02½	@	.03
New Unbleached	.05	@	.05½
Washable, No. 1	.01½	@	.02
Blue Overall	.03½	@	.04
Cottons—According to grades—			
Washable, No. 2	.02½	@	.03
New Blue	.01½	@	.03
Fancy	.01½	@	.03
New Black Soft	.02	@	.04
New Light Seconds	.01½	@	.02
New Dark Seconds	1.50	@	1.75
Khaki Cuttings—			
No. 1 O.D.	.03	@	.04
No. 2 Mixed	.03	@	.04
Corduroy	.02	@	.03
New Canvas	.03½	@	.04½
New Black Mixed	.02½	@	.03½

Domestic Rags (Old)

White No. 1—			
Repacked	2.50	@	3.50
Miscellaneous	1.75	@	2.25
M. G.	3.00	@	3.75
Thirds and Blues—			
Miscellaneous	1.00	@	1.50
Repacked	1.50	@	2.00
Black Stockings (Export)	2.00	@	3.50
Roofing Stock—			
Foreign No. 1	.50	@	.75
Repacked	.70	@	.85

Bagging
(F. o. b. Phila.)

Gunny, No. 1—			
Foreign	1.25	@	1.50
Domestic	1.50	@	1.75
Manila Rope	2.00	@	2.25
Sisal Rope	1.25	@	1.50
Mixed Rope	1.00	@	1.10
Scrap Burlaps—			
No. 1	1.25	@	1.50
No. 2	.80	@	1.00
Wool Tares, heavy	2.75	@	—
Mixed Strings	1.15	@	1.25
No. 1 New Light Burlap	2.25	@	2.50
New Burlap Cuttings	2.00	@	2.25

Old Papers
(F. o. b. Phila.)

Shavings—			
No. 1 Hard White	2.30	@	2.40
No. 2 Hard White	2.10	@	2.15
No. 1 Soft White	2.05	@	2.10
No. 2 Soft White	1.15	@	1.25
No. 1 Mixed	.95	@	1.00
No. 2 Mixed	.75	@	.80
Solid Ledger Stock	1.50	@	1.60
Writing Paper	1.05	@	1.10
No. 1 Books, heavy	.90	@	1.00
No. 2 Books, light	.75	@	.85
No. 1 New Manila	1.20	@	1.50
No. 1 Old Manila	.85	@	.90
Print Manila	.75	@	.80
Container Manila	.80	@	.85
Old Kraft	.90	@	1.05
Common Paper	.40	@	.45
No. 1 Mixed Paper	.35	@	.40
Straw Board Chip	.35	@	.40
Binders Board Chip	.35	@	.40
Corrugated Board	.55	@	.60
Overissue News	.60	@	.65
Old Newspapers	—	@	.45

BOSTON

Paper
(F. o. b. Mill)

Ledgers—			
Sulphite	.06	@	.12½
Rag Content	.12	@	.30
All Rag	.36	@	.52½
Bonds—			
Sulphite	.05½	@	.11
Rag Content	.12	@	.30
All Rag	.36	@	.65
Writings	.06½	@	.20
Superfines	.11	@	.31
Book, Super	.06	@	.09
Book, M. F.	.05½	@	.08½
Book, Coated	.08½	@	.18
Coated Litho	.09	@	.12
Label	.09½	@	.15
Jute Manila No. 1	.11	@	.13
Manila, Sul. No. 1	.04¾	@	.06½
Manila, Sul. No. 2	.03¾	@	.04½
No. 1 Kraft	.04¾	@	.05
No. 2 Kraft	.03¾	@	.04¾

(F. o. b. Boston)

Southern Kraft	.03¾	@	—

(F. o. b. destination in carload lots, f. o. b. mill in less than carload lots.)

Common Bogus	.02	@	.02¼

(Delivered New England points)

News Print, rolls	44.50	@	—
Straw Board, rolls	.009	@	35.00
Straw Board in Sheets, basis 35s to 70s	—	@	40.00
Filled News Board	45.00	@	50.00
Chip Board	42.50	@	47.00
Chip Board (Creasing)	45.00	@	—
Single Manila Lined Chip	52.50	@	62.50
Single White, Patent Coated News Board—Bender	62.50	@	72.50
Wood Pulp Board	70.00	@	75.00
Binder Boards	62.00	@	75.00

Old Papers
(F. o. b. Boston)

Shavings—			
No. 1 Hard White	2.10	@	2.20
No. 1 Soft White	2.00	@	2.10
No. 1 Mixed	.90	@	1.00
No. 2 Mixed	.75	@	.80
Solid Ledger Books	1.40	@	1.50
Overissue Ledger Stock	1.15	@	1.30
Mixed Ledgers	1.00	@	1.10
No. 1 Books, heavy	1.10	@	1.20
No. 1 Books, light	.80	@	1.00
Crumpled Stitchless Book Stock	.50	@	.60
Manila Env. Cuttings	1.25	@	1.30
No. 1 Old Manila	.95	@	1.05
White Blank News	1.15	@	1.25
No. 1 Kraft	1.05	@	1.10
Manila	1.05	@	1.10
No. 1 Mixed Papers	.25	@	.30
Print Manila	.50	@	.55
Overissue News	.55	@	.60
Old Newspapers	.42½	@	.47½
Box Board Chips	.32½	@	.35
Corrugated Boxes	.32½	@	.37½
Screening Wrappers	.60	@	.70

Bagging
(F. o. b. Boston)

Manila Rope—			
Foreign	—	@	2.25
Domestic	—	@	2.50
Transmission Rope	1.50	@	—
Mixed Strings	.65	@	.75
Jute Rope	1.00	@	1.15
Jute Carpet Threads	.65	@	.70
Gunny No. 1—			
Foreign	1.25	@	1.30
Domestic	—	@	1.00
Bleachery Burlap	3.00	@	3.25
Scrap Burlap	—	@	1.00
No. 1 Scrap Burlap	1.20	@	1.25
Scrap Sisal	1.10	@	1.15
Scrap Sisal for shredding	1.15	@	1.30
Wool Tares, heavy	—	@	1.05
New Burlap Cuttings	1.15	@	1.25
Australian Wool Pouches	2.25	@	2.50
Heavy Baling Bagging	1.50	@	1.60
Paper Mill Bagging	.85	@	.95
Bagging No. 2	.50	@	.60
No. 1 Burlap	1.75	@	2.25

Domestic Rags (New)
(F. o. b. Boston)

Shirt Cuttings—			
New Light Prints	.02	@	.02¼
New White No. 1	.05½	@	.06
New White No. 2	.04½	@	.05
Silesias No. 1	.04	@	—
New Black Silesias	.02½	@	.03
New Unbleached	—	@	.03¾
Blue Cheviot	—	@	4.65
Fancy	—	@	.02¼
Washable	.02¼	@	—
Cottons—According to grades—			
Blue Overalls	—	@	.03¾
New Black, soft	.04	@	.04½
Khaki Cuttings	.03	@	.03¼
O. D. Khaki	.03	@	.03¼
Corduroy	.01¼	@	.02
New Canvas	—	@	.05
B.V.D. Cuttings	.05	@	.05½

Domestic Rags (Old)
(F. o. b. Boston)

Canvas	.04½	@	—
White No. 1—			
Repacked	3.00	@	3.50
Miscellaneous	2.00	@	—
White No. 2—			
Repacked	.01½	@	.01¾
Miscellaneous	.01¾	@	.01¾
Twos and Blues	1.25	@	1.50
Thirds and Blues			
Repacked	1.10	@	1.25
Miscellaneous	.85	@	.90
Black Stockings	2.25	@	2.50
Roofing Stock—			
No. 1	.60	@	.65
No. 2	.55	@	.60
No. 3	.35	@	.45

Foreign Rags
(F. o. b. Boston)

Dark Cottons	—	@	.75
New White Shirt Cuttings	5.50	@	6.50
Dutch Blues	2.00	@	2.50
New Checks & Blues	2.50	@	3.00
Old Fustians	1.55	@	1.60
Old Linsey Garments	—	@	1.10

TORONTO

Paper
(F. o. b. Mill)

Bond—			
No. 1 Sulphite	.09¾	@	—
No. 2 Sulphite	.08	@	—
No. 1 Colored	.10¼	@	—
No. 2 Colored	.08½	@	.10½
Ledgers (sulphite)			
Ledgers, No. 1	.34½	@	—
Ledgers, No. 2	.25½	@	—
Writing	.09	@	.09½
Book—			
No. 1 M. F. (Carloads)	6.30	@	—
No. 3 M. F. (Carloads)	5.70	@	—
No. 4 M. F. (carloads)	4.75	@	—
No. 1 S. C. (carloads)	6.65	@	—
No. 3 S. C. (carloads)	6.20	@	—
No. 4 S. C. (carloads)	5.20	@	—
No. 1 Coated and Litho	12.00	@	—
No. 2 Coated and Litho	10.50	@	—
No. 3 Coated and Litho	9.50	@	—
Coated tinted	14.00	@	—
Wrapping—			
Rag Brown	4.25	@	—
White Wrap	2.22½	@	—
"B" Manila	4.75	@	—
No. 1 Manila	5.25	@	—
Fiber	5.25	@	—
Kraft, M. F.	5.75	@	—
Kraft No. 2	5.25	@	—

(F.O.B. Cars Toronto)

News, per ton—			
Rolls (contract)	45.50	@	—
Sheets	50.50	@	—

Pulp
(F. o. b. Mill)

Ground Wood	18.00	@	20.00
Sulphite easy bleaching	40.00	@	—
Sulphite, news grade	38.00	@	—
Sulphite, bleached	50.00	@	55.00
Sulphate	50.00	@	—

Old Waste Paper
(In carload lots, f. o. b. Toronto)

Shavings—			
White Env. Cut	2.00	@	2.10
Soft White	1.60	@	1.90
White Blk. News	1.25	@	1.50
Book and Ledger—			
Flat Magazine and Book Stock (old)	.90	@	1.00
Light and Crumpled Book Stock	.80	@	.90
Ledgers and Writings	1.00	@	1.05
Manilas—			
New Manila Cut	1.25	@	1.50
Printed Manilas	.55	@	.80
Kraft	1.25	@	1.50
News and Scrap—			
Strictly Overissue	1.00	@	—
Strictly Folded	.85	@	—
No. 1 Mixed Paper	.70	@	—

Domestic Rags
(Price to mills, f. o. b. Toronto)

No. 1 White Shirt Cuttings	.05¼	@	.05¼
Fancy Shirt Cuttings	.02¼	@	.02¼